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The ATARI® Resource

JULY 1988 VOLUME 7, NUMBER 3

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A colorful series of exercises to teach children number values and the basics of division.

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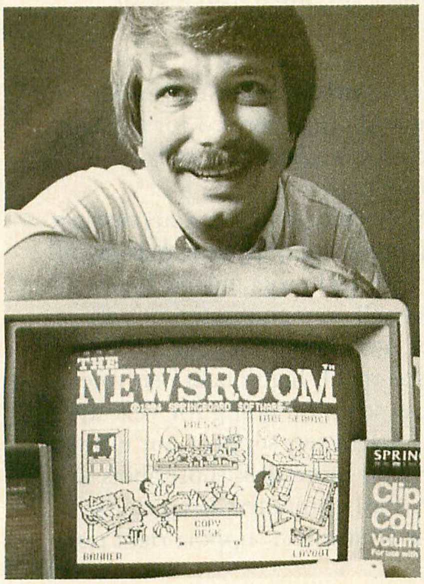


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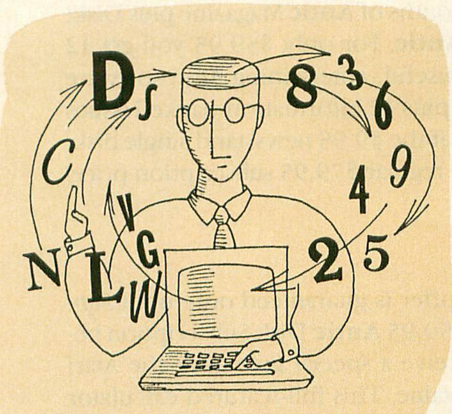


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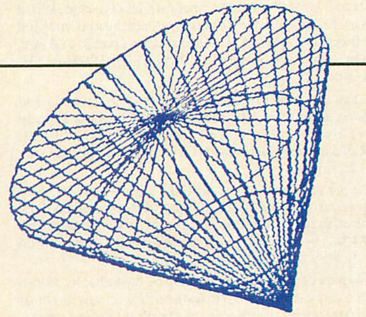
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Our Cover This Month:
Newsroom Photo by Chris Roche

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Disk issues now $5 each—plus Free mini calculator

In this issue you're seeing the payoff of **Antic's** successful Newsroom write-in campaign. An excellent new product arrived for the 8-bit Atari because **Antic** readers answered this magazine's call and took action to benefit the entire Atari community.

For six and a half years, through every change in the Atari market, **Antic** has been the world's best-selling publication meeting Atari users' needs for dependable Atari news, reviews and programs. At this writing, **Antic** is the *only* magazine covering all Atari computer models every month—and there's still *plenty* of Atari news to cover.

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Let's continue working together to make things better for Atari users.

Nat Friedland

Nat Friedland
Editor, Antic

AVATEX CORRECTION

Matt Ratcliff's *Choosing Your Modem* (**Antic**, May 1988) was mistaken in saying that the basic Avatex 1200 baud modem is not acceptable for running a bulletin board because it requires you to switch manually between 300 and 1200 baud. You only need to change baud speeds manually for *outgoing* calls. The modem automatically adjusts to the baud rate of incoming calls, which is all a BBS sysop needs to be concerned about. I have no problems running the LDS/BBS in San Jose—(408) 226-6523—with an Avatex and BBS Express! software.

Rich Anderson
San Jose, CA

JERSEY TRANSPLANT

As a past president of JACG, I too read Paul Tupaczewski's ACENNJ disk newsletter with pleasure and interest. But it is certainly not the first on-disk users group newsletter. For more than two years, Bit Byter User Club of West Germany has published an excellent on-disk newsletter, which we received at JACG as early as the spring of 1986. The Brooklyn Atari Society published another excellent on-disk newsletter in 1983 and 1984.

I should add that many users groups here in Germany publish their newsletters on disk—in fact, there's a public domain program here that makes the editor's task much easier than you'd think.

Joseph Kennedy
Marl, West Germany

WORDPERFECT UPDATE

The latest update disks of WordPerfect 4.1 for the Atari ST are dated March 25, 1988 and are currently being distributed free to all registered Atari WordPerfect owners.

We apologize for any problems you may have experienced with past copies of the Atari version of WordPerfect. We recognize that the program was released too early and with too many bugs. We have since attempted to rectify the problem as quickly as possible by providing free updates as the software is improved and bugs are fixed. We feel this latest update is up to our standards of quality and will provide you with a clean and efficient piece of software. More revisions will be made as necessary.

We are dedicated to the Atari market and plan to introduce some of our other products into that market in the near future, including WordPerfect Library. We hope you will find this latest revison satisfactory and enjoyable as you use it.

Rebecca Mortensen
WordPerfect Corp.

LAPTOP HELP

This is for the May 1988 I/O Board letter write who couldn't get his laptop to communicate with his Atari. I bought a Tandy

continued on next page

102 laptop (little brother to the reader's Tandy 200) after reading the *Laptop-to-Atari Connection* (**Antic**, November 1987). I hooked it to my Avatex 1200hc modem using a male-to-male phone adapter. Sure, faster transmission rates are possible through the RS-232 serial interface, but that would mean disconnecting the modem each time, so I settle for the slower 300 baud rate.

I use the Tandy's TELECOM program with the parameters M8N1E, and 850 Express! on my Atari. Set the Atari program to ASCII format and half duplex. Make sure the switches on the side of the Tandy are set for Direct Connect, Originate Call. Then tell the Atari program to answer a call, and press F4 on the Tandy. You will hear a raspy tone from the Tandy and when it stops, you should be connected.

Troy Carpenter
Harlingen, TX

SUPERDOS MEMORY

Thanks to Matthew Ratcliff for his enthusiastic review of SUPERDOS (**Antic**, June 1988). I would like to clarify the point he brought up about the amount of memory SUPERDOS occupies. In Atari XL/XE and expanded 800 models, available free memory for BASIC is 31093 bytes—only about 1K less than DOS 2.0 or 2.5. That's for two single-density or double-density disk drives. The LOMEM value printed in the review only applies to computers with 48K or less memory and DUP.SYS loaded in. This makes the DOS menu instantly available (no MEM.SAV). Of course, 48K Atari owners could easily configure their systems for more available memory and less convenience.

Charles Cherry
Technical Support

BASIC DIRECTORY

The following BASIC line, entered in direct mode, lists the disk directory without affecting the program in memory. Afterwards, it always generates an ERROR 136—but don't be alarmed: just type END.

```
OPEN #1,6,0,"D:*.*":FOR X=1 TO
1E9:GET #1,A:PRINT CHR$(A);:NEXT X
```

Phillip Chow
Cleveland, OH

FILENAME$

In the following short routine, I can't figure out how to LOAD a filename into A$. It always tries to LOAD a program called D:A$.

```
10 REM TEST
20 DIM A$(100)
30 POSITION 2,10
40 ? "ENTER THE FILE
TO BE LOADED";
50 INPUT #16,A$
60 LOAD A$
```

I also tried LOAD "D1:A$" and LOAD "D1:";A$; in line 60 to no avail.

Jeff Guadagnolo
Hamilton, Ontario
Canada

Try the approach below.—ANTIC ED

```
10 REM TEST
20 DIM A$(20),B$(20)
30 A$="D1:"
40 POSITION 2,10
50 ? "ENTER THE FILE
TO BE LOADED ";
60 INPUT #16,B$
70 A$(4)=B$
80 LOAD A$
```

R-VERTERS IN S*P*A*C*E

In *SX212 Software* (I/O, April 1988), you recommended using Atari's new SX212 modem with the R-Verter handler widely distributed by users groups and online services. The R-Verter works with both AMODEM and 850 Express! to let 8-bit owners use this fine modem without an interface until Atari releases SX Express! software.

S*P*A*C*E (Seattle & Puget Sound Atari Computer Enthusiasts) developed this handler, then mailed copies to other clubs nationwide and uploaded it onto key local and national bulletin boards. S*P*A*C*E members Marc Ingle and Tom Neitzel successfully adapted the old R-Verter handler for the SX-212. The latest version is SX212 Companion! for use with 850 Express! It's available from most users groups as well as GEnie and CompuServe.

Nick Berry
Corresponding
Secretary
S*P*A*C*E

SOFTWARE WANTED!

The success of **Antic's** previous write-in campaigns has prompted this new section of the I/O Board. Software Wanted! will list title requests sent in by Atarians hoping to inspire **Antic** readers to begin writing to the Presidents of software companies and calling for Atari conversions.

ELECTRONIC ARTS
8-BIT: Paper Clip for the XEP80 80-column board (Larry Lussier, Glen Falls, NY). Bard's Tale, Arctic Fox, Marble Madness, Skyfox (Dustin Christmann, APO NY).

ST: Chuck Yeager's Flight Simulator, Ferrari Formula One (Anthony Robinson, Lansing, MI).

WRITE TO: Trip Hawkins, President, Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404.

SIERRA ONLINE
8-BIT: 3-D Helicopter Simulator, Thexder (Jeff Wood, Cheyenne, WY).

WRITE TO: President, Sierra On-line, P.O. Box 485, Coarsegold, CA 94039.

MICRO ILLUSIONS
8-BIT: Fire Power, Turbo, Galactic Invasions, Land of Legends, Faery Tale Adventures (Jeff Wood, Cheyenne, WY).

WRITE TO: President, Micro Illusions, 17408 Chatsworth Street, Granada Hills, CA 91344.

ACTIVISION
8-BIT: Game Maker (Jeff Wood, Cheyenne, WY). Aliens, Hacker II, Last Ninja (Dustin Christmann, APO NY).

WRITE TO: President, Activision, Inc. P.O. Box 7287, Mountain View, CA 94039.

EPYX
8-BIT: The "Games" and "Street Sports" series, Championship Wrestling, Sub Battle Simulator (Dustin Christmann, APO NY).

WRITE TO: President, Epyx Inc., 600 Galveston Drive, Redwood City, CA 94063.

MICROPROSE 8-BIT: Gunship (Brion Forget, Morrisonville, NY).

WRITE TO: William Steahley, President, MicroProse Software, 120 Lakefront Road, Hunt Valley, MD 21030.

DESIGNER WOES

I have a Legend 808 Epson-compatible printer, and Print Shop works fine with it. However, when I choose the Epson option in the Designer Labels program (**Antic**, April 1987), I get an extra space between the lines of my graphic. In fact, this happens no matter which printer I choose. Any suggestions?

Robert Haschalk
Papillon, NE

Your Legend 808 is not 100% Epson-compatible. ***Antic*** *doesn't have one in the office, but here's what we suggest: In line 2240, change the [CONTROL] [X] character (a small upside-down T) to [CONTROL] [L]. When you RUN the program, use the Epson printer option.*—ANTIC ED

I typed in Designer Labels, I even downloaded it from CompuServe, but I can't get it to work with my Atari XMM801, which is supposed to be Epson-compatible.

David McGowan
Edmonton, Canada

Again, we don't have that specific printer to test, but this modification should work. In line 2290, change the [ESC] [LX] to [ESC] [VX] and change the [ESC] [LP] to [ESC] [VP]. NOTE: The P in this second change must *be an inverse uppercase P.*—ANTIC ED

OH, BROTHER

With one very small exception, I have found that *Mighty Mailer* (**Antic**, September 1987) performs "as advertised." There is no problem when I print to my Gemini 10X printer, but when I print to my Brother Correctronic 50 electronic typewriter/printer, each address contains a "(" as its initial character. How can that be eliminated?

Bill Chapman Jr.
U.S. Embassy
Vienna, Austria

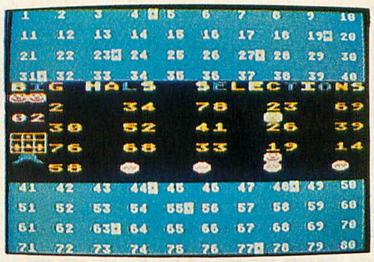
Mighty Mailer was designed for Epson and Epson-compatible printers. The "(" symbol is part of an Epson printer command which sets the left margin.

continued on page 12

Super Disk Bonus

Program by LEN SHIKOWITZ

King Keno Super Bonus



If you enjoy playing Cheapo Keno, this issue's Game of the Month, you'll also want to try your luck with Antic's King Keno July Super Disk Bonus. King Keno is a bigger and more colorful version of the popular bingo-like game. A compiled BASIC program, King Keno delivers most of the speed and power of a pure machine language program. But you don't need any programming language, even BASIC, to run it on 8-bit Atari computers with 48K memory.

King Keno was programmed by Len Shikowitz of San Francisco. The compiled listing is 198 sectors long. If it was printed in the magazine it would consist of at least six pages with nothing but solid-packed data statements.

King Keno is on Side B of this month's Antic Disk. The game has its own built-in Help file which you can select from King Keno's first screen.

To use King Keno, copy KENO.EXE to another disk that contains the DOS 2 files DOS.SYS and DUP.SYS. Put this disk in your drive, remove all cartridges (XL/XE owners press [OPTION]) and turn on your Atari. King Keno will automatically load and run.

Your July 1988 Antic Disk—featuring King Keno as well as the outstanding Top Banner printing program and every type-in listing from this issue—will be shipped to you within 24 hours after receiving your order. Just phone Toll-Free to the Antic Disk Desk at (800) 234-7001. The monthly disk is only $5.95 (plus $2 for shipping and handling) on your Visa or MasterCard. Or mail a $5.95 check (plus $2 shipping and handling) to Antic Disk Desk, 544 Second Street, San Francisco, CA 94107.

Programmers: Antic wants to see your most ambitious programs, even those too large or complex for printing as a type-in listing. High-quality programs in any language that has a runtime version are now eligible for consideration as a Super Disk Bonus.

EXTRA JULY FEATURES

Extra bonus features on this month's Antic Disk include seven flashy print fonts for Top Banner and, for ST users, a highly detailed graphic. Help files provide instructions for using these extra bonus files. ■

By MAXIMILLIAN EISSLER and CHESTER WOZNIAK

Cheapo Keno

Gambling thrills without losing your shirt

Cheapo Keno lets you get your gambling fix without losing your shirt—or even leaving your chair. This quick, slick BASIC version of Keno runs on Atari 8-bit computers of any memory size, with disk or cassette.

"I will not play Keno!"

Those five words had become my motto. I would chant them to myself whenever I entered a casino. Unfortunately I would invariably find myself walking away from a Keno machine three or four hours later—and quite a bit poorer.

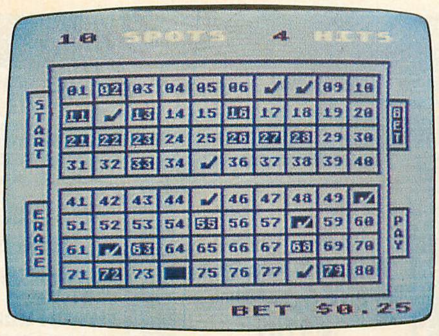
What was I to do? Getting that Keno fix had become all-important and very expensive—so expensive, in fact, that I had to sell my car, my house, my wife and kids, just to satisfy my dreadful habit.

While walking home from Las Vegas to Cathedral City, California, after a particularly expensive trip to the casino, a thought struck me as my bare back sizzled in the desert sun. Maybe my Atari could be used to satisfy my masochistic desire—and maybe I could save just enough money to buy back my wife and at least one kid. Thus was born Atari Cheapo Keno.

GETTING STARTED

Type in Listing 1, KENO.BAS, check it with TYPO II and SAVE a copy before you RUN it.

The principle of Keno machines is diabolically simple. It's a variation of Bingo or Lotto. You bet from one to four quarters, pick one to 10 numbers on an 80-number grid and start the game. The computer randomly picks 20 num-



bers. The more correct guesses you have, the more you win.

When RUN, the program draws the grid along with boxes containing the words START, ERASE, BET and PAY. The cursor will be in the BET box. Pressing the joystick button lets you increase your bet.

Move the cursor to a number you want to pick, and press the joystick button to mark it. If you accidentally mark the wrong number or want to change your mind, move to the ERASE box and press the joystick button. This will remove *all* the numbers you picked.

Pressing the joystick button when the cursor is over the PAY box gives you the payoff schedule and a tally of your bets and winnings. After you place your bet and mark your numbers, go to the START box and begin.

The more numbers you pick, the larger the jackpot—and the greater the odds against your winning. Hitting one out of one, for instance, is relatively easy because the odds are one in four. Hitting 10 out of 10, however, is a feat comparable to standing on your head on a merry-go-round and knocking a fly off a pig's back with a slingshot at 100 yards—which might be more impressive than hitting 10 of 10 in Keno.

Several "systems" for winning at Keno have been developed, but since the numbers are picked randomly, these systems usually end up in cold storage. But since you're not playing with real money in Atari Keno, this program might be a good testing ground for your own systems—or a good way to develop your own theories on winning.

PROGRAM TAKE-APART

0-60	Declare variables, set screens.
205-255	Betting routine.
260-275	Erase numbers.
350-420	Main joystick routine.
480-490	Set screen memory pointer to payoff screen.
650-695	Pick computer numbers.
1001-1010	Data for jackpot amount.
1100-1190	Draw payoff screen. ■

Maximillian Eissler is a retired Norwegian Air Force pilot living in Cathedral City, California, and Chester Wozniak is the director of security at a country club in Rancho Mirage, California. This is their first publication in **Antic**.

Listing on page 29

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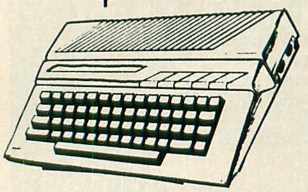
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continued from page 7

Here's how to adjust Mighty Mailer for your printer: First, read through your printer manual and find the printer code which sets the left margin. Now LOAD the Mighty Mailer program and list line 1240. Find the part of the line which reads:

. . . ? #4;**"1";CHR$(40)**;FILE . . .

This Epson printer command, highlighted in boldface, sets the left margin to 40. Change line 1250 the same way, but this time set the left margin to 10 (for the return address).—ANTIC ED

ANTIC PUBLISHER HELP

I can't load Atari Touch Tablet pictures into *Antic Publisher* (**Antic**, December 1987). When I pass them through the *Rapid Graphics Converter* (**Antic**, November 1985), I get garbage on the screen.

Nelson Pollack

Take your original Touch Tablet pictures and use the Rapid Graphics Converter *to change them from Micro Illustrator to Micro-Painter files which should work with* Antic Publisher.—ANTIC ED

NIGERIAN ATARIAN

I am the financial manager with a medium-sized firm in Lagos and have been a devoted Atari user ever since I bought an 800XL, then an 130XE and a 1040ST. (I still want a hard disk, which would ease my operating problems considerably). Everyone who has seen my system at work is impressed—but they lament the dearth of information and Atari software here in Nigeria. Most of my information comes from my **Antic** subscription, which takes a while to reach me. I need any help that readers could give—ideas, software, magazines, books, etc.

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Help

GIF GOOF

In the April and May 1988 issues of **Antic**, we said that Spectrum 512 works with CompuServe GIF files. Unfortunately that only gave part of the story. **Antic** should have made it clear that GIF files must first be converted to Spectrum 512 format with Digispec—a $39.95 program from Trio Engineering, P.O. Box 332, Swampscott, MA 01907. (617) 964-1673.

TAX TEMPLATE FIX

There is an error concerning tax-exempt interest income in the 8-bit *1987 Federal Income Tax Spreadsheet* (**Antic**, April 1988) that might have caused some readers to pay too much taxes. The problem is that although tax-exempt interest income must be reported, it is *not* included in gross income. The simplest fix is to just MOVE cell C14 to D14. This way the @SUM(D12:D28) in cell D29 can remain intact and not include your tax-exempt interest income.

Thomas Kelso
Alamogordo, NM

ENTREPRENEUR JUNGLE

Entrepreneur Jungle, the March 1988 Super Disk Bonus, generates an ERROR 2 when used with some older 800XL computers. To avoid this problem, just LOAD "D:ENTRE.BAS" from your March Antic Disk, delete lines 1-3 and then SAVE the modified program to another disk.

***Antic** welcomes your feedback, but we regret that the large volume of mail makes it impossible for the Editors to reply to everyone. Although we do respond to as much reader correspondence as time permits, our highest priority must be to publish I/O answers to questions that are meaningful to a substantial number of readers.*

Send letters to: Antic I/O Board, 544 Second Street, San Francisco, CA 94107.

Online

By MIKE SCHOENBACH

Mastering CompuServe's New Command System

Guide to all those changes sweeping the SIGs

It has been a little over nine years since CompuServe first introduced its Forum software. Now used by over 130 CompuServe special interest groups (SIGs), the basic look and feel of this software remained consistent despite many changes and revisions.

Meanwhile, during the past seven years CompuServe's navigational command-and-menu software became the system-wide standard because of its intuitive, easy-to-use style. The Forum software menu interface was left untouched for the most part, resulting in two radically different menu systems.

As CompuServe branched off into new markets and its subscriber base grew, it became obvious that it was time to bring Forum software up to the system-wide standard. The main goal was to make it easier for users to concentrate on the *content* of the Forum rather than the *command* system.

Toward that end, CompuServe held several focus group meetings around the country last year (and also sought online feedback) for information on how to improve the Forum environment. The second generation of CompuServe Forum software is now ready and I want to introduce you to the new system.

JOINING A FORUM

As with any local bulletin board system (BBS) or a SIG on a commercial information service, before you can actually use the facilities you must electronically "sign up" as a member. This sign-up is usually nothing more than answering a few simple questions. Joining a Forum generally does not require any commitment from you—you can participate as much or as little as you like.

In past Forum software, if you accessed a Forum where you weren't already a member, you'd see a Visitor's Menu with five choices. If you chose to just visit the Forum, your name and User I.D. were not added to the membership files and you were limited to whatever commands the Forum Administrator (chief system operator) allowed for non-members, usually only the ability to leave a message for the system operator (sysop).

Needless to say, CompuServe wanted a less confusing way for its subscribers to join Forums. So the new software eliminates the visitors menu on all public Forums. Now, when you access a Forum where you're not listed as a member, a visitor's bulletin from the sysop appears. Then you see the Forum's Main Functions menu. One command has been added—JOIN this Forum.

continued on next page

Choose that option or type JOI (you only need the first three letters of a command) to add your User I.D. to Forum membership and activate all privileges. The sysop can also disable certain Forum features for non-members. If you try to access a disabled feature, the software tells you that you need to join and asks if you want to do so now.

MAIN MENU

The Main Functions menu is the first one most people see. Each of its seven choices branches off into a different area of the Forum. The new main menu looks like this:

Atari 8-bit Forum Functions Menu
1 INSTRUCTIONS
2 MESSAGES
3 LIBRARIES (Files)
4 CONFERENCING (# participating)
5 ANNOUNCEMENTS from sysop
6 MEMBER directory
7 OPTIONS for this forum

Enter choice !

Each department can be accessed by typing the appropriate number or the first three letters of the area's name. The new Forum software lets you choose to automatically enter the Forum at any menu. Therefore, the Main Functions menu does not necessarily have to be the first menu you see when entering the Forum. You set this within the OPTIONS category.

INSTRUCTIONS

Though the new Forum menus are very straightforward and easy to use, you really should read the instructions. As with all software, you are bound to find something that you missed before which might end up saving you time and money.

The Online Instructions area menu offers individual information on all the major areas of the forum, an online Help file and a copy of the Forum's reference card. You can also download the entire Forum User Guide. Instructions are available for:

1 Overview
2 Messages
3 Libraries
4 Conferencing
5 Announcements
6 Member directory
7 Options
8 Miscellaneous
9 Complete HELP facility
10 Forum Reference Card
11 Forum User's Guide

Enter choice !

When reading any online instructions, be sure to keep your capture buffer open so you can read the information off-line and cut down on your connect charges. (8-Bit users should use the "capture to disk" feature of your terminal software.) I recommend the complete Help Facility and Forum User's Guide.

MESSAGES

The Forum's Message Center is where members can find assistance and meet new people (who might live halfway around the world). CompuServe's redesign effort is most noticeable here. Cryptic commands such as RF have been replaced by more intuitive commands such as READ FORWARD which, like all commands, can be abbreviated to its first three letters (REA FOR).

Several new menu selections enhance message retrieving. You can enter the Message Center by choosing command 2 (above) or typing MES from the main Functions menu. The Messages menu looks like this:

Atari 8-bit Forum Messages Menu

Message age selection = [New]
1 SELECT (Read by section and subject)
2 READ or search messages
3 CHANGE age selection
4 COMPOSE a message

Enter choice !

The first three choices deal with retrieving messages. Choice 4, or COM, lets you compose your own message to post on the Forum's message board using one of the two message editors available—LINEDIT (a line-oriented editor, much like those available on local bulletin boards) or EDIT (a powerful File Generator and Editor, formerly called FILGE).

Forum message boards tend to become very large, and message numbers get up to five or six digits. Now you can specify how far back you want to retrieve messages in terms of *days* instead of message numbers—no more guessing which message number was the first one posted three days ago. To do this, just change your age selection. The default age is set to retrieve new messages since your last log-in to the Forum. The age selection can be changed by choosing command 3 (above) or typing CHA at the Messages menu command prompt. The Change age selection menu looks this way:

Atari 8-Bit Forum Change Menu
1 [*] NEW messages
2 [ ] ALL messages
3 [ ] STARTING message number
4 [ ] Number of DAYS

Enter choice !

Your current setting is the one with the asterisk [*]. If you want to read only the last three days of messages, choose command 4 and respond to the "# of days:"

prompt with 3—or type DAYS 3 at the change menu command prompt.

The message number and age aren't the only retrieval criteria you can specify. You can also select messages by individual message number, message subtopics, or message subjects. By choosing command 2 or typing SEL from the message menu, you can select a second retrieval criteria.

Next menu is Forum Sections, which offers different choices depending on the specific Forum you're in and your retrieval age selection. This menu will show a list of subtopics containing messages pertinent to your age selection. Next to each subtopic are the number of subjects (threads) and the number of actual messages in the subtopic that meet your age selection. Here's an example:

```
  Atari 8-bit Forum Sections Menu

  Section names (#subjs/# msgs)
1 Games/Entertainment (2/5)
2 Telecommunications (7/20)
4 Sound & Graphics (1/1)
5 Applications (3/10)

  Enter Choice(s) or ALL !
```

From this menu you can choose to read from one, some or all subtopics. Multiple subtopics are separated by commas, so if you want to select only Telecommunications and Applications messages, you'd type 2,5 at the Enter Choice(s) or ALL ! prompt.

Next, the Forum Subjects menu lists all subjects and the number of messages displayed. From here you can again choose to read one, some or all subjects in that subtopic. You'll see a Forum Subjects menu for each subtopic you choose to read from the Forum Subtopics menu. Here's an example:

```
  Atari 8-bit Forum Subjects Menu

  Subject (# msgs)

  Section 2—Telecommunications
1 When MPP EXPRESS 3.0 (2)
2 Viewing RLE Pics (3)
3 New Forum Menu Q's (4)
4 New term software (2)
5 Using ATARI8 (5)
6 New BBS (1)
7 ANTIC ONLINE (3)

  Enter choice(s) or ALL !
```

All the submenus resulting from the SELECT command aren't nearly as complex as they seem. The online Instruction Guide gives you more in-depth information.

But how about experienced users who want access to the "classic" CompuServe reading commands. By selecting choice 2 or typing READ from the Forum Message menu you'll get the following:

```
Atari 8-bit Forum Read Menu

  Read
1 [NEW] messages
2 Message NUMBER
3 WAITING messages for you (0)
  Search [NEW] messages
4 FROM (Sender)
5 SUBJECT
6 TO (Recipient)

  Enter choice !
```

The Read menu lets you read an individual message selected by its number, read *all* messages based on your age selection, do Read Searches, or read any waiting messages addressed specifically to your User I.D. Read Search seeks messages by the sender's (or receiver's) name or User I.D., or the subject.

Eventually you'll be able to bypass many menus by *chaining* commands—for example, typing REA DAY 8 FRO:SCHOENBACH at the main Functions menu will search the last eight days' worth of messages from anyone named Schoenbach. CompuServe's online documentation explains command chaining in more detail.

LIBRARIES

Data Libraries in a CompuServe Forum contain user and sysop-submitted programs and text files for you to download. CompuServe currently supports the following file transfer protocols: XMODEM (MODEM7), CompuServe A, CompuServe B, DC4/DC2 CAPTURE, Kermit, and CompuServe Quick B.

To enter the Forum's Data Libraries, type 3 or LIB at the Main Functions menu. At the next prompt, type the number of the Data library you selected. You'll then see the following menu:

```
  Atari 8-bit Forum Library 7

  - News & Reviews -
1 BROWSE thru files
2 DIRECTORY of files
3 UPLOAD a new file
4 DOWNLOAD a File
5 LIBRARIES

  Enter choice !
```

Command 1 (BRO) puts you in Browse mode—the system goes through the Data Library files, from most to least recent, showing a complete description of the file followed by the option to download it or move on to the next one. Before Browsing, you'll be asked whether you

continued on page 17

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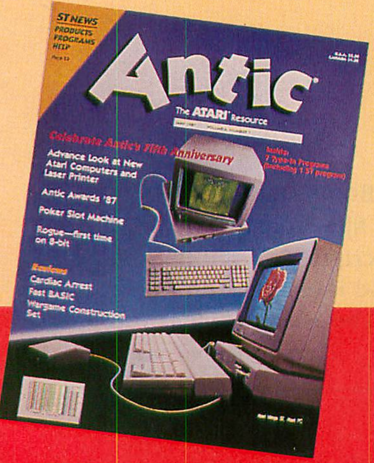
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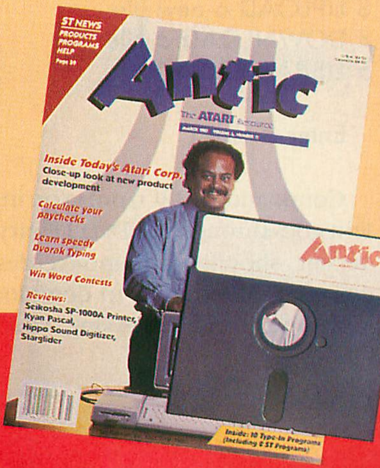
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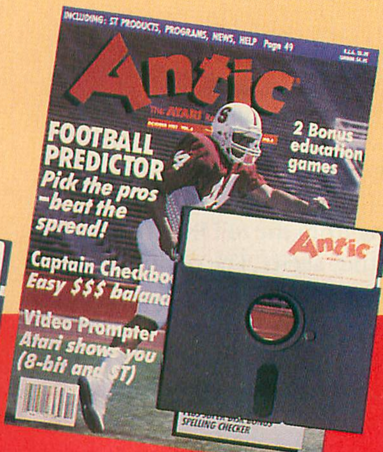
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want to search only files containing certain "keywords." If so, the system will find *only* the type of files you're looking for. Command 2 (DIR) simply lists a directory of files for that Data Library.

Use command 3 (UPL) to submit a file to the Data Library. There are *no* CompuServe connect charges for upload time. Use command 4 (DOW) to download a file from the Data Library. And command 5 (LIB) lets you change Data Libraries.

If you know the number of the Data Library you want to access, you can simply type LIB followed by the Data Library number at the Main Functions or Library menu. For example, typing "LIB 7" puts you directly into Data Library 7.

CONFERENCE

The Conference area is the basically the Forum's "lounge" where you can communicate electronically with other users in real time. Often the sysops invite a special guest, such as Bill Wilkinson of OSS, Leonard Tramiel of Atari Corp., Tom Harker of ICD, Express! programmer Keith Ledbetter, or spokespersons from **Antic**, Virtusonics and Datasoft.

On the other hand, impromptu conferences as well as regularly scheduled gab sessions are also very popular. Every Sunday at 9 p.m. EST, members from all over the United States gather in the Atari 8-Bit Forum (type GO ATARI8) to talk about any number of topics.

The Conference area takes a little getting used to, but many online Help files are available. I recommend HOW2CO.HLP and NEWCO.TXT in Data Library 2 (LIB 2) of the Atari 8-Bit Forum. You also should consult the Conference documentation in the Instructions area of the Forum.

ANNOUNCEMENTS

Each Forum contains eight announcement (bulletin) files with important, timely information about the Forum. Some announcements are automatically displayed whenever the sysop updates them, and others can be read only if you enter the Announcements area of the Forum and choose to read them. Choosing command 5 (ANN) at the Main Functions menu presents something like the following:

```
Atari 8-bit Forum Announcements Menu
1 News Flash
2 General
3 Messages
4 Conference
5 Library
6 Membership
7 Sysop Roster
8 New Member
Enter choice !
```

The News Flash Announcement is displayed automatically to members entering the Forum if they haven't seen it yet. This Announcement is kept brief, often directing you toward other, more detailed Announcement files. The General Announcement, for instance, often elaborates on the News Flash Announcement.

The Messages Announcement contains information on any Hot Topics discussed on the Forum's message board.

The Conference Announcement is automatically displayed to members entering the Conference area who haven't seen the latest update. This Announcement informs you of any upcoming conferences and provides tips for using the Conference facility.

The Library Announcement often highlights some of the most recent uploads to the Forum's Data Libraries. It also contains tips on uploading and searching the Libraries for interesting files.

The Membership Announcement includes the purpose of the Forum. Pertinent operating rules are also listed here.

The Sysop Roster lists the names, interests, and the User I.D.s of the Forum Managers.

The New Member Announcement of important Forum information is displayed automatically when you join the Forum.

MEMBER DIRECTORY

The Membership Directory is one of the best places to meet new people who share your interests. Choosing command 6 (MEM) at the Main Functions menu presents:

```
Atari 8-Bit Forum Member Directory Menu

your current entry
1 ADD/modify
2 LIST
3 DELETE
  Search by
4 USER I.D.
5 NAME
6 INTEREST

Enter choice !
```

The first three choices pertain to your own membership directory entry. If you haven't filled one out, choose command 1 (ADD) at the prompt. Command 2 (LIS) lets you list out your entry to be sure it's accurate. And command 3 (DEL) lets you delete your membership directory entry.

The last three choices are for searching the membership directory by User I.D., name or interests. Once you find the names and User I.D.'s of people you'd like to know, be sure to drop them a "Hello" note through EasyPlex mail or in the Forum.

OPTIONS

The last major area of the Forum is Options, where you can tailor the Forum to your needs. This includes setting a different prompt character, turning menus on or off and

continued on page 37

STOP THE PRESSES:

NEWSROOM ARRIVES FOR 8-BIT ATARI!

Antic write-in campaign pays off

Reviewed by Jim Pierson-Perry



Newsroom ($49.95) is an easy-to-use page design application that puts the basic power of the press into your hands. You can quickly and easily create personalized newsletters, flyers and other short publications. This software is all you need for writing articles, adding pictures and designing the overall page layout.

As long-time 48K Atari 800 owner, I started reviewing the 64K Newsroom on a borrowed XE model. My family and I liked Newsroom so much that we bought an Atari 65XE computer just to continue using this program.

In May 1987, **Antic** kicked off a write-in campaign to convince Springboard Software to make an 8-bit Atari conversion of its popular Newsroom home publishing program. Two months and hundreds of letters later, Springboard president John Paulson gave the go-ahead. The Atari Newsroom was released in March, 1988.

SETTING UP

Newsroom requires an Atari XL/XE with at least 64K memory, an Atari 1050 disk drive (or a compatible drive

Jim Pierson-Perry recently co-wrote an article in Clinical Chemistry titled "Automated Assay of Effective Heparin Activity in Plasma." He also programmed Designer Labels *(**Antic**, April 1987) and last month's* Super CZ *MIDI application.*

that reads enhanced density disks) and a graphics-capable dot-matrix printer. Most likely you'll also need a printer interface such as ICD's P:R: Connection or the Atari 850, because the only direct-connect printer supported by the software is the Atari XMM801. However, the 64 printer drivers included in Newsroom should cover just about any standard printer.

Newsroom also requires Atari BASIC, so keep your finger off the [OPTION] button when loading the program. The Newsroom disks are copy-protected and formatted in enhanced density (DOS 2.5). Your data file disks must be formatted by the Newsroom program.

The Newsroom manual is clear and well-written, with numerous illustrations and screen shots. The provided tutorial gives step-by-step instruction in preparing a sample one-page newsletter.

Newsroom comes with more than 600 pieces of clip art. Three more $29.95 clip art disks are available, providing an additional 2,000 general, business and sports/recreation images. Springboard discounts the entire product line if you order directly from them — $39.95 for Newsroom and an extra $9.95 for each clip art collection.

PANEL DISCUSSION

Newsroom publications are designed and printed one page at a time. A page is made up of individual panels (see *Figure 1*) that can each contain pictures and/or text. Standard 8 1/2×11 inch paper can hold eight panels, or six panels with a double-panel banner across the top of the page. Longer (14-inch) legal paper adds an extra two panels to the bottom of the page.

Each panel and banner is stored on disk as a separate data file. An additional page layout file controls panel positioning. All files for a given page should be kept on the same data disk.

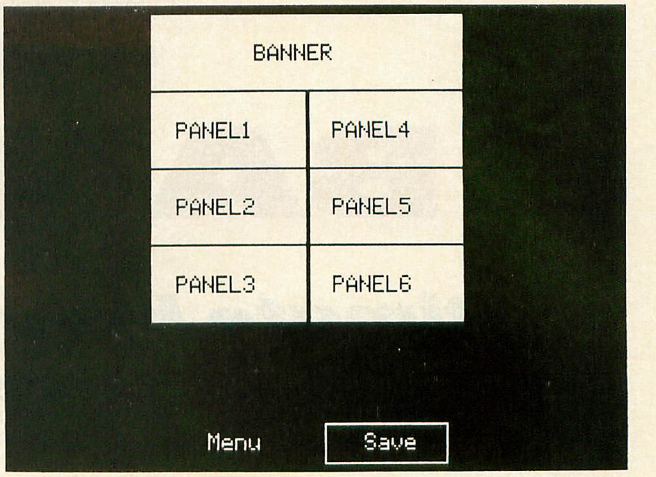


Figure 1

The Newsroom main menu leads to five simulated departments—Photo Lab, Copy Desk, Banners, Layout and Press. The natural flow is to create pictures in the Photo Lab, then add text to form individual panels in Copy Desk. A banner, if needed for the page, is composed in Banners. You set the overall page format in Layout by deciding what panels to use and in what order. Then you print the page in Press.

Throughout the program, commands are selected by using either a joystick or the keyboard control arrows to pick from a menu of icons. This system is easy and intuitive. An undo command, appropriately called Oops, can be called from the Photo Lab, Banners or Copy Desk to cancel the most recent action. *continued on page 26*

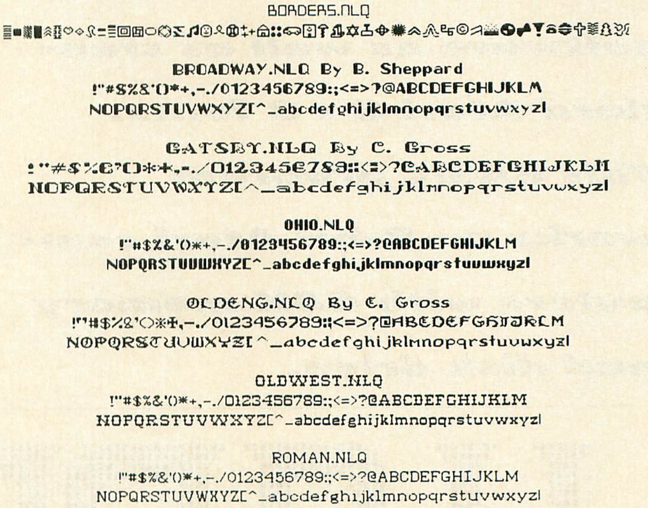
DAISY-DOT II
Roy Goldman
2440 South Jasmine
Denver, CO 80222
(303) 756-6678
$10, 48K disk

Reviewed by Charles Cherry

Most Atari owners are aware of Daisy-Dot, a program that prints text in a variety of excellent near letter-quality fonts on Epson and Star printers. Daisy-Dot took the Atari world by storm last year because it works so well and is public domain.

Now welcome Daisy-Dot II. It's more than just an upgrade, it's a whole new package. It makes desktop publishing a reality for the Atari. While News Station and Newsroom work as page layout programs, Daisy-Dot II makes it easy to "typeset" an entire manuscript. To prove this, the excellent, 25 page, manual is included on the disk as a Daisy-Dot II file. Just print it out.

The manual demonstrates multiple fonts (even on the same line), microspaced justification, block left, block right, centering, proportional tabs (for microspaced tables), bold print, double width characters, underlining, and included pictures. And that's just the first page. Daisy-Dot II also does superscript and subscript, prints chained files, prints a range of pages and prints multiple copies.



The disk has 15 fonts, including the high-resolution new Senator style. There's an elegant font editor to design your *continued on page 26*

John Paulson, president of Springboard Software. Photo courtesy of Minneapolis Star and Tribune.

TOP BANNER!

Ultimate banner maker even uses Print Shop fonts

By Jacob Donham
and
Lee Brilliant, M.D.

Top Banner is a banner printing program that's loaded with features but easy to handle. It can even use fonts from Broderbund's Print Shop software as well as standard Atari 8 × 8 fonts. This BASIC program works on 8-bit Atari computers with 48K memory and disk drive.

Top Banner easily produces a tremendous variety of horizontal banners or vertical streamers on just about any Epson-compatible dot-matrix or letter quality printer. You can control the height (up to eight inches) and width of each individual letter, as well as choosing the character that each letter is to be printed with. You can even use fonts from Broderbund's Print Shop software as well as standard 8×8 Atari fonts.

GETTING STARTED

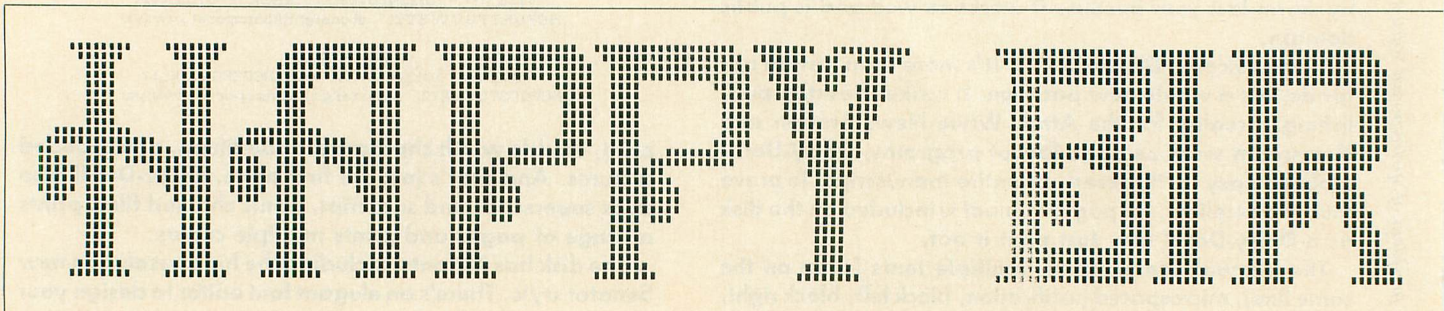
Type in Listing 1, TBANNER.BAS, check it with TYPO II and SAVE a copy to disk before you RUN it.

Control the pointer on any menu with the up and down [ARROW] keys. You don't need to hold down the [CONTROL] key. Press [RETURN] to select an item or [ESC] to go to the previous menu.

The main menu choices are as follows:

EDIT MESSAGE takes you to an editing window so you can type the text of the banner. You can re-edit a message without retyping the whole thing. To erase the whole message, go to Edit and press [RETURN] without moving the cursor. NOTE: Trying to shift from a standard 8×8 font to a special Print Shop font will erase your message.

CHANGE PARAMETERS brings up another menu where you can change INDIVIDUAL or OVERALL parameters, or use EFFECTS. Selecting INDIVIDUAL takes you to a window where you move the cursor with the left and right [ARROW] keys. Press [RETURN] to enter your changes in foreground, background, height and width of each character. The foreground and background values are the ASCII codes that will be sent to your printer. The numbers that



*(Talk about an embarrassment of riches! **Antic** hasn't printed a banner-making program since the highly popular* Bannertizer *(December 1984) because we didn't get another submission that did the job better. But now we suddenly had two!*

From Jacob Donham, author of the ambitious MegAnimator *in the February 1988 **Antic**, we accepted a powerful banner program controlled via easy-to-use pull-down menu windows. Then a few weeks later, well-known 8-bit programmer Lee Brilliant sent in his own banner program that did just about everything Donham's program did—plus accepting Print Shop fonts. When we asked Dr. Brilliant if we could add his Print Shop module to Donham's program, he generously offered to combine the best of both programs.*—ANTIC ED)

determine the height and width of each "printed pixel" must be between 1 and 10. OVERALL lets you change the parameters of all the characters at once.

There are also four special effects:

RESPECTIVE FOREGROUND/BACKGROUND automatically sets each character to be printed equal to the ATASCII value of the overall letter. For example, if you had a banner that said "Hi", the "H" would be made up of little *H* characters, the "i" of *i* characters.

SHRINKING/GROWING makes the sizes of letters increase or decrease from left to right.

LOAD CHARACTER SET is where you enter the filename of the font you want. When you decide to print your banner, you'll be notified if you haven't yet typed a message or if your printer is disconnected. If an error message pops up, press any key to return to the main menu.

Each character has a different density when printed on paper. You can use this to your advantage. For instance, a letter made of periods will be much lighter than one made of asterisks. Interesting fade-ins and fade-outs can be produced by clever use of the foreground. You can also create small capitals by changing the heights and widths of some of the characters. Many of Top Banner's features work well together, while other combinations produce less-satisfactory results. By all means, experiment.

ABOUT THE PROGRAM

Top Banner uses quasi-pull-down menus. I did this the hard way, by PRINTing each menu separately. However, I'm working on a system that will create menus from DATA statements, requiring much less code.

Line 1010 lets you set up the program for your own printer. RESET$ contains the printer reset command which re-initializes all printer settings to the power-up defaults. It also contains the commands setting the printer's line feed length to 1/72 inches. MARGIN$ contains the command to set the printer's left margin (see example in line 3050). SMALL$ contains the command which sets the print pitch to 17 characters per inch.

PRINT SHOP FONTS

Top Banner is unusual because it uses not only standard 8×8 Atari fonts, but fonts that are compatible with Broderbund's Print Shop software as well. On Print Shop's menu screens, those nine fonts have names like Alexia or RSVP, but on the disk their filenames are simply F0 to F8.

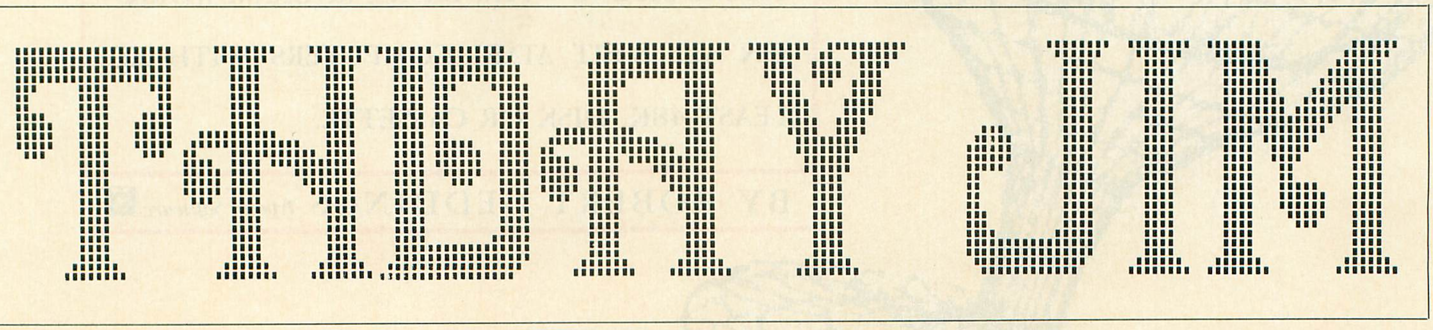
Unlike DOS files, Print Shop fonts are only stored in contiguous sector blocks. So they can't be scattered all over the sector map like DOS files. If you want to modify a font using Print Shop Companion's font editor, you can only shrink it—you can't expand it. The Companion's fonts use the filename FO. plus the title and they also have different filename structures and file sizes.

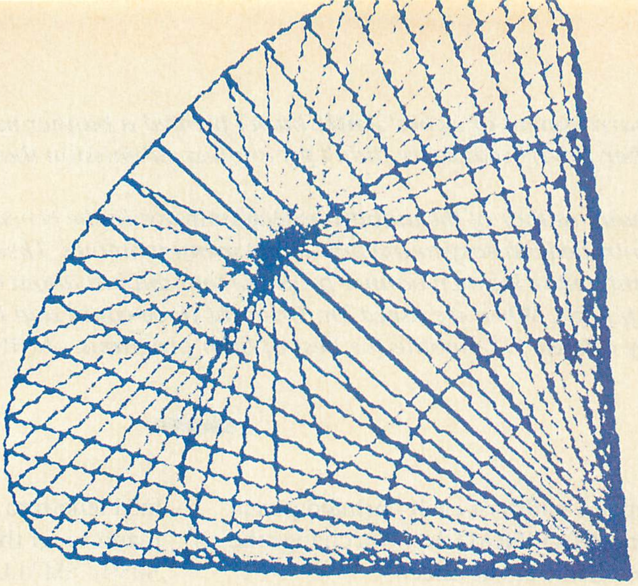
The font directory starts on sector 362 and each directory entry occupies 32 bytes. (DOS directories start at sector 361, and filenames occupy only 16 bytes.) Bytes 17 and 18 of a Print Shop font filename contain the starting sector, while bytes 25 and 26 hold the file size.

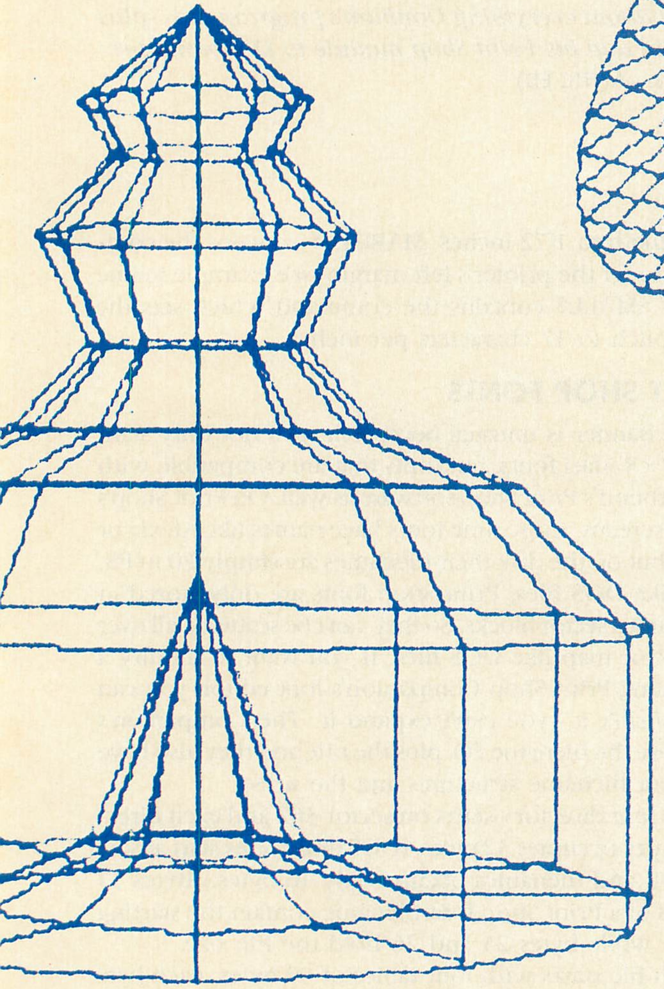
Each file starts with four tables of 59 bytes, each byte corresponding to an ASCII character from 32 to 91—from space to Z. The @ is not used and has no values in the tables. The first table contains the width of each character in columns because Print Shop fonts are proportional, unlike fixed 8×8 fonts. The second table contains the height in rows, and the last two tables contain the address in RAM where each character's shape starts as it is loaded.

The characters in the Print Shop memory map start in RAM at $60EC (24812 decimal). The rest of the file contains the the font data itself. Companion files have an ad-

continued on page 39





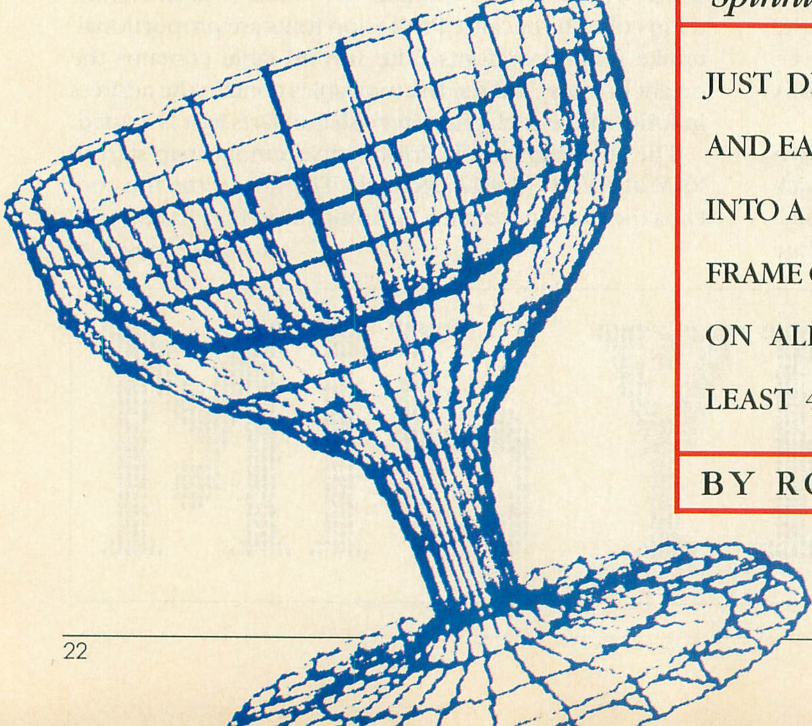


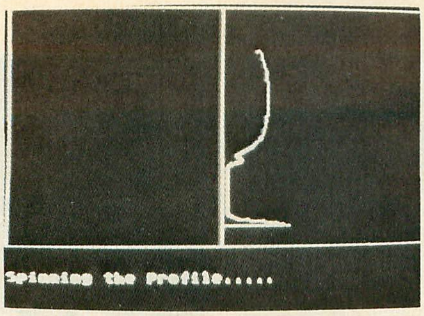
EASY 3-D WIRE FRAMES

Spinning the shapes of your imagination

JUST DRAW A SHAPE WITH YOUR JOYSTICK AND EASY 3-D WIRE FRAMES SPINS THAT SHAPE INTO A COMPLETE THREE-DIMENSIONAL WIRE FRAME GRAPHIC. THIS BASIC PROGRAM WORKS ON ALL 8-BIT ATARI COMPUTERS WITH AT LEAST 48K, DISK OR CASSETTE.

BY ROBERT GEDDINGS *Type-In Software*





Before


After

A BLUEPRINT OF A HOUSE is a typical "wire-frame" graphic—a drawing composed entirely of lines, instead of a realistic "solid model" drawing of a house with everything colored or shaded.

Imagine being able to create three-dimensional wire frame graphics with no more effort than using a joystick to draw a single profile. That would be pretty nice, right? Well, you don't need to strain your imagination. Easy 3-D Wire Frames gives you that ability right now.

With Easy 3-D Wire Frames, in a few minutes you can be designing an infinite variety of 3-D wire-frame spheres, cones, toruses, cubes, funnels and more. . . The number of different objects you can design is limited only by your imagination.

This program is an easy-to-use graphics system for creating realistic 3-D wire frame images. With Easy 3-D Wire Frames, you simply create an object's "profile" (one of its sides). The program "spins" the profile around a center line, creating the wire frame. Easy 3-D Wire Frames takes care of all the messy little details such as calculating all the data points, fitting the object to the screen and displaying it in three dimensions.

3-D TERMINOLOGY

Before starting to use the program, there are a few computer graphics concepts that you need to be familiar with.

Axis: Most computer users are familiar with the standard three-dimensional axis that has the X-Axis going left and right, the Y-Axis moving up and down and the Z-Axis giving the illusion of going forward and backward inside the screen.

Easy 3-D Wire Frames rotates this axis slightly in order to get a 3-D effect when viewing the image. The left/right X-Axis is unchanged, but the Z and Y Axis have been *reversed.* Now the Z-Axis is the up/down movement on the screen and the Y-Axis moves into and out of the viewing plane.

Translation: Moving an object along any axis is called a translation. Translating an object has no effect on how the object will appear, it is simply used to move the object to a different place on the screen. For instance, after you create an object, if it seems too high on the screen you can use translation to move it towards the center.

Yaw: The best way to explain what the next three terms mean is to compare them to something you do every day. So. . . Yaw is the horizontal movement made when you shake your head "No." It is rotation around the Z-Axis.

Roll: When confused, you might tilt your head *diagonally* towards one side. This is roll. It is rotation about the Y-Axis.

Pitch: Shake your head up and down for "Yes." This is pitch. You rotate the object about the X-Axis.

STEP BY STEP

Type in Listing 1, SPIN.BAS, check it with TYPO II and SAVE a copy before you RUN it.

Now let's go through each step of the process for creating a wire frame graphic, explaining the successive prompts as they appear.

The first thing you will be asked is whether you want to start a new drawing or load an older one. If you select Load, you will be asked to type the filename of the drawing. Remember to add the drive number (such as D1:SPHERE.3D). The file will then be loaded and you will go directly to the viewing screen.

If you select New, you will be asked to enter the number of control points you want, up to a maximum of 30. Control points are the individual data elements that actually make up the image. The wire frame lines simply connect the control points together. Here you are being asked only for the number of control points making up *one* profile (side), not the entire wire frame. For practical purposes, a number between 10 and 20 is best.

Next you are asked the number of sides the wire frame will have. Although you can have as many as 30 sides, a number between 10 and 15 should be picked. The more control points and sides you select, the longer it will take to do the calculations and drawing on the screen.

The next prompt asks if you want to use the default view. Type Y to select the default or N to define your own. If you select "Yes" you will immediately go to the drawing area. If you select "No" you will be asked seven more questions.

You can accept the default values for any one of the following seven questions by pressing [RETURN] without entering new numbers.

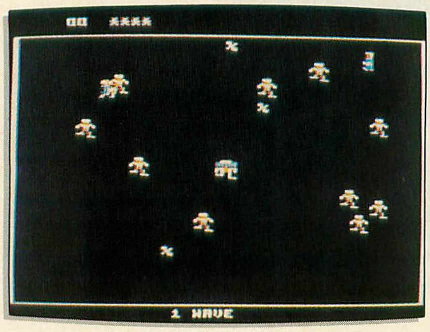
Magnification: This tells the computer how big to make the drawing. The larger the magnification value, the larger the graphic.

MX, MY, MZ: These are the translation values I mentioned earlier. They are useful for centering the image on the screen.

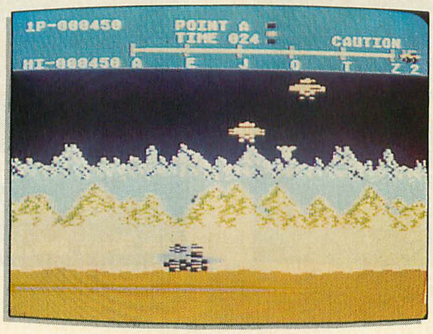
Yaw, Roll, Pitch: These values are in degrees, so enter a number between 0 and 360.

After you answer all the above questions, either by en-

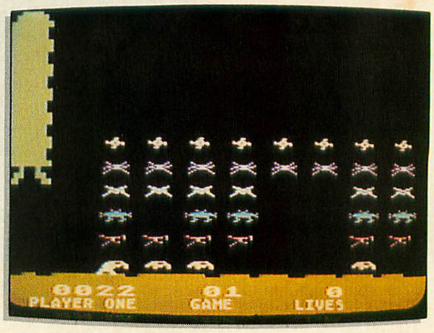
continued on page 40



Robotron

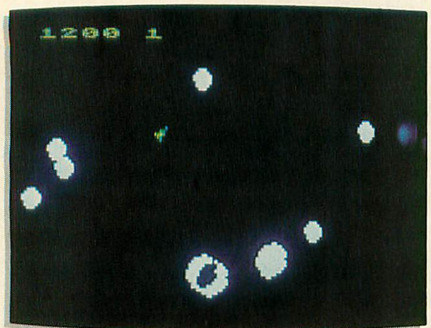


Moon Patrol

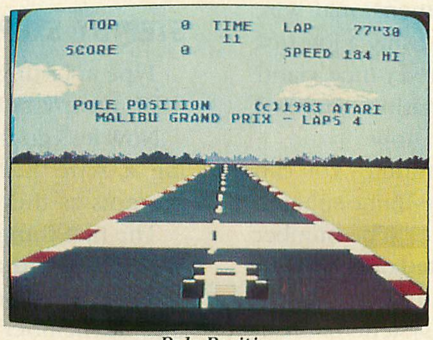


Space Invaders

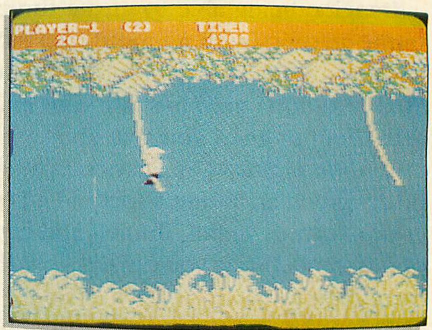
Classic Cartridges



Asteroids

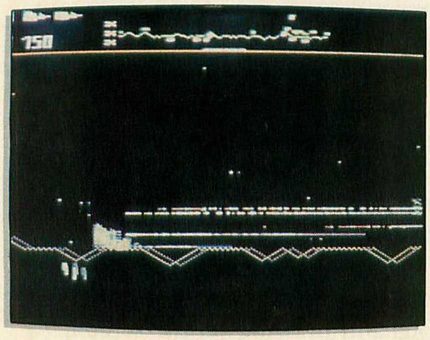


Pole Position

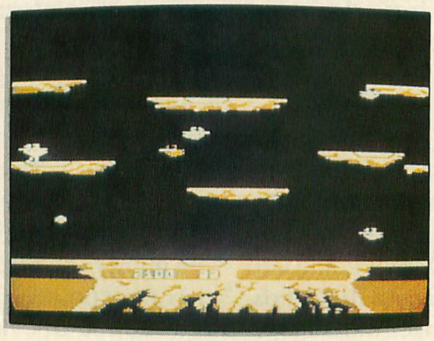


Jungle Hunt

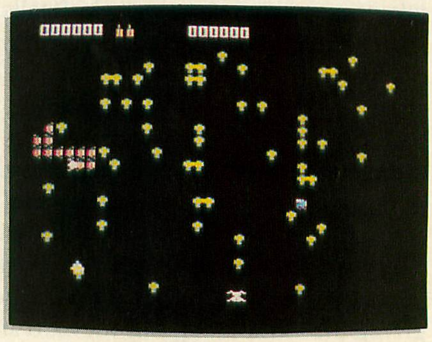
Revisited



Defender

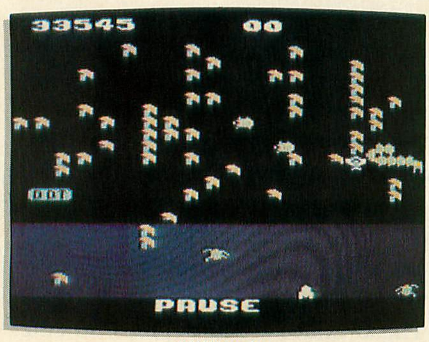


Joust



Centipede

Pole Position, Joust, Moon Patrol and other greats!



Millipede

By Matthew Ratcliff

With Atari's release of the XE Game System, some outstanding new game cartridges have appeared and some terrific oldies have *reappeared*. Of course, all these entertainment cartridges work on *any* 8-bit Atari computer—800, XL or XE.

Newer Atarians may well have missed some of these classic Atari games the first time around, because the cartridges have not always been too easy to find. However, if you can't obtain these titles at a convenient local dealer, you can order them direct from Atari at invitingly low prices.

In this series, I'll take quick looks at some of Atari's all-time best cartridge games and rate them on a four-star system.

ROBOTRON ★★

The robots are kidnapping all your friends, and only *you* can save them! **Robotron** ($19.95) is a good arcade translation, but it doesn't live up to its coin-op ancestor. Because the beasties you're blasting are "character"

graphics, the characters "jump" about on the screen, unlike the smooth animation of Player/Missile graphics. This makes it difficult to anticipate the movement of the baddies, so you get killed a lot. Of course, each level has more bad guys which are faster, weirder and tougher to nuke.

MOON PATROL ★★★★

This coin-op port has it all. Shoot the bad guys as you drive over the moon's surface through 26 levels of difficulty. While driving, you can even jump your vehicle over craters and opponents. The neatest feature about **Moon Patrol** ($19.95) is that you can *always* continue from one game to the next, so you can play as many games as necessary to get through all the levels for practice, before tackling the entire course in one game. All too many games make you start again from scratch. This one is a must for any gamer's collection, with superbly detailed graphics and smooth scrolling backgrounds.

SPACE INVADERS ★★★½

I bought an Atari because of this game. It's impossible to "finish" **Space Invaders** ($6.95)—you always die. You just blast away at the invaders until battle fatigue gets to your joystick wrist, and it's all over. But the sound effects are. . . Wow! As the invaders get closer, faster, and *louder*, your pulse quickens with each trigger-press. Once you "land" the spaceship you get a neat effect and you continue from there, *ad infinitum*, until Space Invader Death creeps in. The major inconsistency in Space Invadors is that in the two-player mode, when one player dies, the next gets a turn. When the first player goes again, the *entire round* must be repeated. This doesn't happen in one-player mode.

ASTEROIDS ★★★

Late one night I "mastered" **Asteroids** ($6.95). This coin-op conversion can handle up to four competing players at once (on a 400/800). Put simply: You nuke asteroids till you die. And in the "combat mode," players can blast one another for fast (typically brief) games. You get an extra ship for every 10,000 points. And after scoring a quarter-million points with over 20 spare space ships, I was about done in. At 2 a.m. I had to decide to go for a full million points, or get a little sleep before work the next day.

The "glitch" in Asteroids is its Pause mode. You can press the [SPACEBAR] to pause play, but if the attract mode kicks in, you can't continue. The pursuit of points in a video game loses all its glamour at this point, but Asteroids is still great, with good sound effects and decent graphics considering its 8K cartridge limitation.

POLE POSITION ★★★★

Pole Position ($19.95) is my favorite 8-bit game of all time. It's true to the original coin-op, lacking only some voice synthesis and billboard advertisements. Playability, graphics and sound effects are all superb. You must weave in and out of a pack of cars to qualify for the big race, passing at least one along the way. If you pass them all, you can get Pole Position. From there, the race is on.

Shifting from low to high gear, at around 90 mph, you are racing at simulated speeds of up to 193 mph. The fire button is your brake pedal, but I prefer to hit the median to slow down and get some bite to take some of the sharper turns. Your viewpoint is slightly behind and above the car, maneuvering in an increasingly tighter pack of cars for four laps. You are given a maximum time to complete each lap. Run out of time before completing a lap and the race is over.

Your final score is based upon total cars passed and extra time remaining at the end of the run. The real challenge is to complete a four-lap race with over 60,000 points and no crashes (you can generally afford two or three crashes during the course of one race). This game takes much more skill than luck, which is what keeps me coming back for more.

JUNGLE HUNT ★★★

A funny thing happened on the way to your safari—you lost your girlfriend. Maybe Tarzan has stolen her? No, it's worse! Cannibals have swiped her and you're invited *as* dinner. In **Jungle Hunt** ($19.95) you must swing through the vines, swim the crocodile-infested waters, climb mountains and finally outwit the cannibals to save your sweetie. This challenging game is reminiscent of Pitfall, but more imaginative and quite playable, and you can actually finish the game. The graphics are very good, but the sound effects remind me of those you hear in old Intellivision games—which weren't too hot.

DEFENDER ★★½

Defender ($19.95) is a disappointing coin-op conversion for a couple of reasons. The graphics are rather slow, jerky and not very sharp, which makes it difficult to "anticipate" the moves of your foes. There aren't enough buttons on your joystick, so Atari placed the Smart Bomb on the keyboard's [SPACEBAR]. The only time you will use the Smart Bomb is to nuke a whole swarm of bad guys when the pressure is on. Under such pressure, players tend to pound the [SPACEBAR] as if they were hammering ten-penny nails into an oak 2×4. The result is damaged keyboards, *many* of them.

The revised version for the XEGS will probably use one of the console keys, which are flush with the computer case. If you *loved* the coin-op Defender and *must* have a version at home, this will do fine.

JOUST ★★★★

Joust ($19.95) for the 8-bit Atari is undoubtedly one of the finest arcade translations ever. This unique game is seldom imitated because of the sophistication required. Mounted on what looks like a flying ostrich (although it's called a buzzard), you and an optional teammate fly against ever more deadly jousting birds and pterodactyls. If you collide with an opponent at the higher altitude, the bird

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STOP THE PRESSES: NEWSROOM ARRIVES FOR 8-BIT ATARI
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SAY CHEESE

Artwork can be included in your publications as "photos" created in the Photo Lab by combining clip art, text and graphic enhancements. You can use 30 pieces of clip art in a single photo. However, *only* Springboard clip art can be used! There's no way to import art from other sources such as Print Shop icons or MicroPainter pictures.

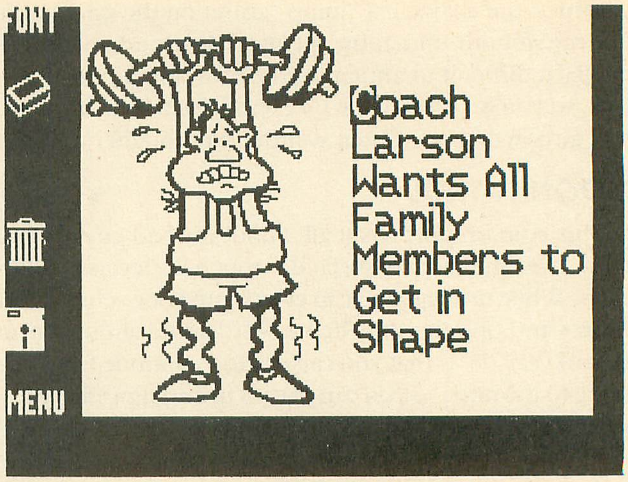
*(If you can develop a method to incorporate Print Shop icons or other graphics, as well as additional fonts, fills, etc. send it to **Antic** for possible publication.*—ANTIC ED)

Clip art is stored on disk in families of two to eight related pictures. A directory of all artwork is given in the program manual. Manuals for the other volumes of clip art contain their own pictorial directories. After you choose a family name, the art is copied to the screen where you can select the desired piece and put it in your working area. Clip art can be moved around the work area and flipped across the Y-axis to give a mirror image. It cannot be scaled or rotated.

The graphics toolbox provides shapes, fill patterns, lines, circles and rectangles. Freehand drawing and erasing are supported along with 10 pre-defined pen shapes and 10 fill patterns. The zoom magnifies small areas of the panel on a pixel-by-pixel scale for fine tuning.

WRITE STUFF

After assembling the artwork and using the toolbox for any touch-up work, you're ready to "take a photo." A set of cursors appear which you can position to define the



area of the picture to be included in the photo. The photo is then saved to disk for use at the Copy Desk.

Text is added at the Copy Desk, one panel at a time. Three large fonts are available for headlines and two normal fonts are provided for the text itself. These normal fonts are scaled-down versions of large fonts, not new styles. All five fonts are easily readable. No capabilities are provided for creating new fonts, importing any of the hundreds of existing screen fonts in the public domain or changing font size.

Each panel can contain a photo, text or both. One large and one normal text font can be used in a panel, but not mixed on a single line. First a photo is positioned within a panel. As text is added, it flows across and down from the upper left, automatically wrapping around the photo. You can reposition the photo any time and the text will adapt to the new set-up. *continued on page 38*

DAISY-DOT II
continued from page 19

own, and a utility package that converts Atari screen fonts into Daisy-Dot fonts and automatically creates italicized font versions. In case that isn't enough, on the back of the disk is the graphics printing program Billboard (reviewed in Antic, February 1988), which has been modified to print pictures to the disk in files that can be merged into your Daisy-Dot document.

LIMITATIONS

Daisy-Dot II is decidedly not WYSIWYG—what you see *isn't* what you get. It takes a couple of steps to produce a finished manuscript. First, compose your text in your favorite word processor, then print it to disk. Load this disk file back into the word processor and do your formatting using Daisy-Dot II commands. Save this file; load Daisy-Dot II, and finally print the file. Since you never see the results on the screen, it may take a couple of tries to get it right. But you'll improve with experience.

The letters in the individual fonts cannot be taller than the printhead on your printer. This means that banner headlines and other large effects are out. Of course you can include large letters as pictures, but pictures cannot be mixed with text on the same line—unless you run the paper through the printer a couple of times. Since all the printing (including text) is essentially a bit-mapped graphics dump, the program is slow and uses up ribbons.

Daisy-Dot II only works with Epson MX, FX, and Star compatible printers. It does not work with some very early Star Gemini-10X printers, but Daisy-Dot author Roy Goldman is working on the problem.

Nevertheless, the results are fabulous, far better than I'd have thought possible. As a final nice touch, Daisy-Dot II is well-behaved and will work with any DOS, meaning that you can use your high-speed drives and mega-RAMdisks. For instance, pairing it with TextPro and a large RAMdisk will speed up things wonderfully. You can instantly shuffle the programs back and forth in the RAMdisk. You can also load and save the text instantly and print from the RAMdisk (including fonts).

Daisy-Dot II is still public domain. You can get it free from your local user group, bulletin board, or a commercial online service like CompuServe or GEnie. You can also order it directly from the author. For $10 (or more) he'll send you the double-sided disk with the documentation already printed out. Wherever you get it, if you like the program (and I can't imagine anyone not liking it), send the author some money. The only thing rarer than a program like this is a programmer like Roy Goldman—support him. ■

SOFTWARE LIBRARY

DISK SUBSCRIBERS: Programs for 8-bit Atari computers can be used immediately. Just follow instructions in the accompanying magazine articles. ST Owners: See monthly disk's ST Help File for instructions on how to transfer programs to 3-1/2 inch disk.

DOS COMPATIBILITY: All 8-bit programs published by **Antic** are tested to work with Atari Disk Operating System (DOS) 2.0S and 2.5—*not* with the incompatible DOS 3.0. DOS 2.0S is available on each Antic Monthly Disk. Copy the DOS.SYS and DUP.SYS files.

TYPING SPECIAL ATARI CHARACTERS

Antic printed program listings leave a small space between each Atari Special Character for easier reading. Immediately below you will see the way **Antic** prints all the standard Atari letters and numbers, in upper and lower case, in normal and inverse video.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxyz
0123456789 0123456789

The Atari Special Characters and the keys you must type in order to get them are shown in the two boxes below.

NORMAL VIDEO

FOR THIS	TYPE THIS	FOR THIS	TYPE THIS
	CTRL ,		CTRL S
	CTRL A		CTRL T
	CTRL B		CTRL U
	CTRL C		CTRL V
	CTRL D		CTRL W
	CTRL E		CTRL X
	CTRL F		CTRL Y
	CTRL G		CTRL Z
	CTRL H		ESC ESC
	CTRL I		ESC CTRL −
	CTRL J		ESC CTRL =
	CTRL K		ESC CTRL +
	CTRL L		ESC CTRL *
	CTRL M		CTRL .
	CTRL N		CTRL ;
	CTRL O		SHIFT =
	CTRL P		ESC SHIFT CLEAR
	CTRL Q		ESC DELETE
	CTRL R		ESC TAB

INVERSE VIDEO

FOR THIS	TYPE THIS	FOR THIS	TYPE THIS
	人 CTRL ,		CTRL X
	人 CTRL A		CTRL Y
	人 CTRL B		CTRL Z
	人 CTRL C		ESC SHIFT DELETE
	人 CTRL D		ESC SHIFT INSERT
	人 CTRL E		ESC CTRL TAB
	人 CTRL F		ESC SHIFT TAB
	人 CTRL G		人 CTRL .
	人 CTRL H		人 CTRL ;
	人 CTRL I		人 SHIFT =
	人 CTRL J		ESC CTRL 2
	人 CTRL K		ESC CTRL DELETE
	人 CTRL L		ESC CTRL INSERT
	人 CTRL M		
	人 CTRL N		
	人 CTRL O		
	人 CTRL P		
	人 CTRL Q		
	人 CTRL R		
	人 CTRL S		
	人 CTRL T		
	人 CTRL U		
	人 CTRL V		
	人 CTRL W		

Whenever the CONTROL key (CTRL on the 400/800) or SHIFT key is used, *hold it down* while you press the next key. Whenever the ESC key is pressed, *release* it before you type the next key.

Turn on inverse video by pressing the Reverse Video Mode Key . Turn it off by pressing it a second time. (On the 400/800, use the Atari Logo Key instead.)

Among the most common program typing mistakes are switching certain capital letters with their lower-case counterparts—you need to look especially carefully at P, X, O and 0 (zero).

Some of Atari Special Characters are not easy to tell apart from standard alpha-numeric characters. Usually the Special Characters will be boxed. Compare the two sets of characters below:

SPECIAL	STANDARD
CTRL F	/
CTRL G	SHIFT +
CTRL N	SHIFT −
CTRL R	−
CTRL S	+

HOW TO USE TYPO II (8-BIT)

TYPO II automatically proofreads **Antic**'s type-in BASIC listings for 8-bit Atari computers. It finds the exact line where you made a program typing mistake.

Type in TYPO II and SAVE a copy to disk or cassette. Now type GOTO 32000. When you see the instruction on the screen, type in a single program line **without the two-letter TYPO II code** at the left of the line number. Press the [RETURN] key.

Your line will reappear at the bottom of the screen with a two-letter TYPO II code on the left. If this code is not exactly the same as the line code printed in the magazine, you mistyped something in that line.

To call back any line previously typed, type an asterisk [*] followed (without in-between spaces) by the line number, then press [RETURN]. When the complete line appears at the top of the screen, press [RETURN] again. This is also the way you use TYPO II to proofread itself.

To LIST your program, press [BREAK] and type LIST. To return to TYPO II, type GOTO 32000.

To remove TYPO II from your program, type LIST "D:FILENAME",0,31999 [RETURN] (Cassette owners LIST "C:). Type NEW, then ENTER "D:FILENAME"[RETURN](Cassette—ENTER "C:). Your program is now in memory without TYPO II and you can SAVE or LIST it to disk or cassette.

Don't type the TYPO II Codes!

```
WB 32000 REM TYPO II BY ANDY BARTON
VM 32010 REM VER. 1.0 FOR ANTIC MAGAZINE
HS 32020 CLR :DIM LINE$(120):CLOSE #2:CLO
   SE #3
BN 32030 OPEN #2,4,0,"E":OPEN #3,5,0,"E"
YC 32040 ? "↖":POSITION 11,1:? "TYPO II "

EM 32050 TRAP 32040:POSITION 2,3:? "Type
   in a program line"
HS 32060 POSITION 1,4:? " ":INPUT #2;LINE
   $:IF LINE$="" THEN POSITION 2,4:LIST B
   :GOTO 32060
XH 32070 IF LINE$(1,1)="*" THEN B=VAL(LIN
   E$(2,LEN(LINE$))):POSITION 2,4:LIST B:
   GOTO 32060
TH 32080 POSITION 2,10:? "CONT"
MF 32090 B=VAL(LINE$):POSITION 1,3:? " ";
NY 32100 POKE 842,13:STOP
CN 32110 POKE 842,12
ET 32120 ? "↖":POSITION 11,1:? " TYPO II 
   ":POSITION 2,15:LIST B
CE 32130 C=0:ANS=C
QR 32140 POSITION 2,16:INPUT #3;LINE$:IF
   LINE$="" THEN ? "LINE ";B;" DELETED":G
   OTO 32050
VV 32150 FOR D=1 TO LEN(LINE$):C=C+1:ANS=
   ANS+(C*ASC(LINE$(D,D))):NEXT D
WJ 32160 CODE=INT(ANS/676)
JW 32170 CODE=ANS-(CODE*676)
EH 32180 HCODE=INT(CODE/26)
BH 32190 LCODE=CODE-(HCODE*26)+65
HB 32200 HCODE=HCODE+65
IE 32210 POSITION 0,16:? CHR$(HCODE);CHR$
   (LCODE)
VG 32220 POSITION 2,13:? "If CODE does no
   t match press  RETURN  and edit line a
   bove.":GOTO 32050
```

gambling thrills without losing your shirt

CHEAPO KENO

Article on page 8

LISTING 1

Don't type the TYPO II Codes!

```
LX 2 REM CHEAPO KENO
RD 3 REM BY MAXIMILLIAN EISSLER AND CHEST
   ER WOZNIAK
OQ 4 REM (c)1988, ANTIC PUBLISHING INC.
GQ 5 A=PEEK(106)-8:BRK=(PEEK(53279)=5):DL
   1LO=PEEK(560):DL1HI=PEEK(561):SCR=(A+4
   )*256:GRAPHICS 0:REM ALT SCREEN
XS 6 POKE 106,A:DIS=DL1LO+DL1HI*256:SAVMS
   CL=PEEK(88):SAVMSCH=PEEK(89)
VA 10 DIM GUESS(80),CR(10),CG(80),A$(10),
   CP(20):TBETS=0:TWINS=0:NGS=0:CG=0
LR 13 FOR A=0 TO 80:GUESS(A)=0:NEXT A
QF 15 GRAPHICS 0:GOSUB 180:POKE 709,112:P
   OKE 710,120:POKE 712,120:POKE 711,252:
   POKE 764,255:POKE 752,2
BN 16 ? :POKE 82,0:POKE 708,50:SM1=PEEK(8
   8):SM2=PEEK(89)
RE 19 REM INCLUDE GR.1 IN DL.
MU 20 DIS1=PEEK(560):DIS2=PEEK(561)
GV 30 A=DIS1+256*DIS2:POKE A+6,6:POKE A+7
   ,6:POKE A+28,6
UL 40 POKE DIS,112:POKE DIS+1,112:POKE DI
   S+2,112:POKE DIS+3,70:POKE DIS+4,SAVMS
   CL:POKE DIS+5,SAVMSCH
IP 50 FOR A=6 TO 28:POKE DIS+A,6:NEXT A:P
   OKE DIS+29,65:POKE DIS+30,DL1LO:POKE D
   IS+31,DL1HI
GZ 60 SCS=SCR+39:SCL=SCR+479:FOR A=SCS TO
    SCL STEP 40:POKE A,0:NEXT A
SP 100 ? "▚":POSITION 4,3:? "┌";:FOR A=1
   TO 9:? "──┬";:NEXT A:? "──┐"
KF 110 FOR A=1 TO 4
WK 120 POSITION 4,A*2+2:? "│";:FOR B=1 TO
    10:IF A=1 AND B<10 THEN ? "0";B;:GOTO
    140
GB 130 ? (A-1)*10+B;
HJ 140 ? "│";:NEXT B
XE 150 POSITION 4,A*2+3:? "├";:FOR B=1 TO
    10:? "──┼";:NEXT B:? "┤":NEXT A
JL 151 POSITION 4,11:? "├";:FOR A=1 TO 10
   :? "───";:NEXT A:? "┤"
ZE 152 POSITION 4,12:? "├";:FOR A=1 TO 9:
   ? "──┬";:NEXT A:? "──┤"
PA 153 FOR A=5 TO 8
MP 154 POSITION 4,A*2+3:? "│";:FOR B=1 TO
    10:? (A-1)*10+B;"│";:NEXT B
YN 155 POSITION 4,A*2+4:? "├";:FOR B=1 TO
    10:? "──┼";:NEXT B:? "┤":NEXT A
JJ 160 POSITION 4,20:? "└";:FOR A=1 TO 10
   :? "──┴";:NEXT A:? "┘"
BC 163 POKE 764,255:IF SAME=1 THEN 950
HK 164 DATA 1,4,5,1,13,5,35,5,3,35,14,3
IJ 165 A$="│↓←←←│ ":RESTORE 164:FOR E=1 T
   O 4:READ B,C,D:GOSUB 195:? "←←└──┘":NEX
   T E
WK 166 FOR A=4 TO 34:POSITION A,2:? "─":P
   OSITION A,21:? "─":NEXT A:FOR A=3 TO 2
   0
NA 167 POSITION 3,A:? CHR$(124-120*(A=4 O
   R A=10 OR A=13 OR A=19)):POSITION 35,A
```

continued on next page

```
VN 168 ? CHR$(124-123*(A=5 OR A=9 OR A=14
   OR A=18)):NEXT A:POSITION 3,2:? "◘":P
   OSITION 35,2:? "◙"
RL 169 POSITION 3,21:? "◘":POSITION 35,21
   :? "◙":FOR A=1 TO 4:ON A GOSUB 170,171
   ,172,173:NEXT A:GOTO 2000
WR 170 POSITION 2,14:? "E■■R■■A■■S■■E":RE
   TURN
VW 171 POSITION 2,5:? "S■■T■■A■■R■■T":RET
   URN
MY 172 POSITION 36,6:? "B■■E■■T":RETURN
YP 173 POSITION 36,15:? "P■■A■■Y":RETURN
KM 175 POSITION 2,14:? "E■■R■■A■■S■■E":RE
   TURN
LB 176 POSITION 2,5:? "S■■T■■A■■R■■T":RET
   URN
ST 177 POSITION 36,6:? "B■■E■■T":RETURN
TE 178 POSITION 36,15:? "P■■A■■Y":RETURN
ZD 180 POKE 77,0:IF  NOT (BRK) THEN POKE
   16,112:POKE 53774,112
ZP 190 RETURN
HR 195 POSITION B,C:? "■■■■■■■■ ";:FOR A=
   1 TO D:? A$;:NEXT A:RETURN
ZB 200 REM BETTING SUBROUTINE
XV 205 GOSUB 177
JC 207 FOR A=1 TO 25:NEXT A
DC 210 J=STICK(0):IF J=9 OR J=10 OR J=11
   THEN 300
GG 212 IF J=13 OR J=14 AND BET>0 THEN NUM
   =70:GOSUB 172:FOR A=1 TO 20:NEXT A:GOT
   O 460
KZ 214 IF J<9 AND BET>0 THEN NUM=11:GOSUB
   172:GOTO 432
UE 220 IF STRIG(0)=1 THEN 210
XS 230 IF BET=4 THEN ? "■";:GOTO 210
HR 240 BET=BET+1
SP 245 FOR A=13 TO 0 STEP -1:SOUND 0,2,10
   ,A:SOUND 1,2,6,A:NEXT A
FF 250 POSITION 10,22:? "BET $";:GOTO 250
   +BET
WS 251 ? "0.25";:GOTO 255
VW 252 ? "0.50";:GOTO 255
YW 253 ? "0.75";:GOTO 255
EO 254 ? "1.00";
GS 255 FOR A=0 TO 100:NEXT A:GOTO 210
YM 259 REM ERASE NUMBERS SUBROUTINE
DV 260 GOSUB 175:FOR A=1 TO 25:NEXT A
QA 261 J=STICK(0):IF J<9 THEN GOSUB 170:G
   OTO 350
OG 263 IF J<13 AND J>7 THEN GOSUB 170:NUM
   =70:GOTO 460
ZX 265 IF J=13 OR J=14 THEN GOSUB 170:NUM
   =11:GOTO 432
AR 267 IF NGS=0 THEN 261
BF 268 IF STRIG(0)=1 THEN 261
GS 269 SOUND 0,50,10,4:FOR A=1 TO 25:NEXT
   A:SOUND 0,0,0,0
UX 270 NGS=0:TNUM=NUM:FOR NUM=1 TO 80:IF
   GUESS(NUM)=1 THEN GUESS(NUM)=0:GOSUB 5
   00:GOSUB 530
NB 275 NEXT NUM:NUM=TNUM:POSITION 2,1:? "
   0 SPOTS  0 HITS  ":GOTO 261
QU 300 IF BET=0 THEN 210
UW 310 GOSUB 172
ZW 349 REM MAIN ROUTINE
ET 350 GOSUB 500:IF GUESS(NUM)=1 THEN ? "
   ■■":GOTO 360
JS 353 POKE 77,0
TR 355 GOSUB 510
UH 360 CG=RND(1):IF STRIG(0)=0 AND GUESS(
   NUM)=0 AND NGS<10 THEN 600
QE 370 J=STICK(0):IF J=15 THEN 360
TY 375 GOSUB 500:IF GUESS(NUM)=1 THEN ? "
   ■■":GOTO 385
UG 380 GOSUB 530
YV 385 IF NUM-INT(NUM/10)*10=1 THEN 425
GC 390 IF NUM/10=INT(NUM/10) THEN 450
AN 395 IF NUM<11 AND J<>6 AND J<>10 AND J
   <>14 THEN 405
LM 397 IF NUM<11 THEN NUM=NUM+70-(J=10)+(
   J=6):GOTO 420
LB 400 IF NUM>70 AND J<>9 AND J<>5 AND J<
   >13 THEN 405
CW 402 IF NUM>70 THEN NUM=NUM-70-(J=9)+(J
   =5):GOTO 420
JG 405 NUM=NUM-(J=9 OR J=11 OR J=10)+(J=5
    OR J=6 OR J=7)-10*(J=10 OR J=14 OR J=
   6)+10*(J=9 OR J=5 OR J=13)
OK 420 GOTO 350
MU 425 IF J>11 OR J<9 THEN 395
VR 430 IF NUM>40 THEN 260
EK 432 GOSUB 176:FOR A=1 TO 25:NEXT A
RM 433 J=STICK(0):IF J<9 THEN GOSUB 171:G
   OTO 350
VP 435 IF J<13 AND J>7 THEN NUM=20:GOSUB
   171:GOTO 205
XB 437 IF J=13 OR J=14 THEN NUM=51:GOSUB
   171:GOTO 260
CD 439 IF STRIG(0)=1 THEN 433
AO 440 IF NGS=0 THEN 433
FY 443 SOUND 0,50,10,4:FOR A=1 TO 25:NEXT
   A:SOUND 0,0,0,0
QH 445 GOTO 650
GL 450 IF J>7 THEN 395
VK 455 IF NUM<50 THEN 205
YH 460 GOSUB 178
JK 465 FOR A=1 TO 25:NEXT A
KO 470 J=STICK(0):IF J<13 AND J>7 THEN GO
   SUB 173:GOTO 350
TP 472 IF J=13 OR J=14 THEN NUM=20:GOSUB
   173:GOTO 205
QZ 473 IF J<9 THEN NUM=51:GOSUB 173:GOTO
   430
CV 475 IF STRIG(0)=1 THEN 470
CD 476 IF NGS=0 THEN 470
GQ 477 SOUND 0,50,10,4:FOR A=1 TO 25:NEXT
   A:SOUND 0,0,0,0
MS 478 POKE 559,0
HE 479 REM THE PAYOFF SCREEN USES SEPERAT
   E MEMORY TO AVOID HAVING TO REDRAW EA.
   TIME
HN 480 POKE 560,DL1LO:POKE 561,DL1HI
OP 482 POKE 88,SAVMSCL:POKE 89,SAVMSCH
HS 483 POSITION 0,0:? "■"
KH 484 POSITION 0,0:FOR A=0 TO 20:? "
                 ":NEXT A
SB 485 POKE 559,34
KM 490 GOTO 1100
RJ 500 Y=INT((NUM-1)/10):X=NUM-Y*10:POSIT
   ION X*3+2,Y*2+4+(NUM>40):RETURN
QU 510 IF NUM<10 THEN ? "■";:GOTO 520
RJ 515 ? CHR$(INT(NUM/10)+176);
LJ 520 ? CHR$(NUM-INT(NUM/10)*10+176);:RE
   TURN
AL 530 IF NUM<10 THEN ? "0";
JQ 535 ? NUM;:RETURN
UO 600 GUESS(NUM)=1:NGS=NGS+1:GOSUB 500:?
    "■■":FOR A=1 TO 25:SOUND 0,100,10,10:
   NEXT A:SOUND 0,0,0,0
IM 610 POSITION 2,1:? NGS;" SPOTS  0 HITS
   ":GOTO 370
OU 649 REM TIME FOR THE COMPUTER TO PICK
   NUMBERS
JV 650 TBETS=TBETS+BET:HIT=0:FOR A=0 TO 8
   0:CG(A)=0:NEXT A:NCG=0
PG 660 FOR A=1 TO 20:FOR B=1 TO 15:NEXT B

OW 670 CG=INT(80*RND(1)+1):IF CG(CG)=1 TH
   EN 670
AH 680 CP(A)=CG:CG(CG)=1:IF GUESS(CG)=0 T
   HEN SOUND 0,150,10,4:NUM=CG:GOSUB 500:
   GOSUB 510:GOSUB 695:NEXT A:GOTO 700
EG 685 CR(HIT+1)=CG
SP 690 NUM=CG:HIT=HIT+1:SOUND 0,100,10,10
   :GOSUB 500:? "■■"
KZ 691 POSITION 2,1:? NGS;" SPOTS  ";HIT;
   " HITS":GOSUB 695:NEXT A:GOTO 700
LV 695 FOR B=1 TO 20:NEXT B:SOUND 0,0,0,0
   :RETURN
GD 699 REM FLASH HITS UNTIL BET IS MADE
DZ 700 IF HIT=0 THEN 790
IU 701 RESTORE 1000+NGS:READ A:IF HIT>=A
   THEN 900
XA 705 GOSUB 171:GOSUB 177:BET=0
JP 710 FOR A=1 TO HIT:NUM=CR(A):GOSUB 500
   :? "■■":IF STRIG(0)=0 THEN 800
CZ 720 NEXT A
FU 740 FOR A=1 TO HIT:NUM=CR(A):GOSUB 500
   :? "■■":IF STRIG(0)=0 THEN 800
DF 750 NEXT A
OT 770 GOTO 710
UR 790 GOSUB 171:GOSUB 177
MU 795 IF STRIG(0)=1 THEN 795
SP 799 REM RESET SCREEN AND SHOW FIRST BE
   T
YK 800 FOR A=13 TO 0 STEP -1:SOUND 0,2,10
   ,A:SOUND 1,2,6,A:NEXT A:POSITION 0,22:
   ? "          ";
MB 803 POSITION 10,22:? "BET $0.25";:POSI
   TION 2,1:? NGS;" SPOTS  0 HITS  "
LR 805 FOR A=1 TO 20:NUM=CP(A):IF GUESS(N
   UM)=0 THEN GOSUB 500:GOSUB 530
```

```
WG 810 IF GUESS(NUM)=1 THEN GOSUB 500:? "
   "
TX 820 NEXT A:NUM=20:BET=1:GOTO 250
FP 899 REM PAYOUT COINS
WZ 900 FOR B=1 TO HIT-A+1:READ C:NEXT B:C
   =C*BET:TWINS=TWINS+C
JL 910 POSITION 0,22:? "PAY";
EA 920 A=0
TF 930 D=INT(RND(1)*8):A=A+D:IF A>C THEN
   D=C-A+D:A=C
BA 940 POSITION 4-(A>39)-(A>399)-(A>3999)
   -(A>39999),22:? "$";A/4;
CA 950 IF A/4=INT(A/4) THEN ? ".00";
RH 960 IF A/4-INT(A/4)=0.5 THEN ? "0";
DP 969 IF D=1 THEN 972
BM 970 IF D=0 THEN 980
ZC 971 FOR B=1 TO D-1:FOR E=13 TO 5 STEP
   -1:SOUND 0,1,10,E:SOUND 1,1,2,E:NEXT E
   :NEXT B
NU 972 FOR B=13 TO 0 STEP -1:SOUND 0,1,10
   ,B:SOUND 1,1,2,B:NEXT B
BM 976 IF A<>C AND A>160 THEN A=C:D=0:GOT
   O 940
YR 980 IF A<>C THEN 930
QW 990 GOTO 705
OK 1000 REM PAYOFF DATA
DF 1001 DATA 1,3
DS 1002 DATA 2,12
KQ 1003 DATA 2,1,44
FF 1004 DATA 2,1,2,160
KI 1005 DATA 3,1,8,900
KN 1006 DATA 3,1,4,80,2200
MH 1007 DATA 3,1,2,20,200,6000
TL 1008 DATA 4,1,7,80,1500,10000
WP 1009 DATA 4,1,4,40,280,2800,10000
YF 1010 DATA 5,1,20,160,1000,7000,10000
VJ 1099 REM PAYOFF SCREEN
FJ 1100 POSITION 1,0:? "marked ";NGS
FU 1105 POSITION 1,1:? "catch    pay"
XI 1110 RESTORE 1000+NGS:READ A:FOR B=A T
   O NGS:READ C
LP 1120 POSITION 1,2+B-A:? B:POSITION 9,2
   +B-A:D=C*BET:? "$";D/4;:IF INT(D/4)=D/
   4 THEN ? ".00";
QH 1130 IF D/4-INT(D/4)=0.5 THEN ? "0";
LA 1140 NEXT B:? :? :? "bets $";TBETS/4;:
   IF INT(TBETS/4)=TBETS/4 THEN ? ".00";
QS 1145 IF TBETS/4-INT(TBETS/4)=0.5 THEN
   ? "0";
MR 1150 ? :? "winnings $";TWINS/4;:IF INT
   (TWINS/4)=TWINS/4 THEN ? ".00";
NP 1155 IF TWINS/4-INT(TWINS/4)=0.5 THEN
   ? "0";
MK 1160 IF TBETS=TWINS THEN ? :? "even";:
   GOTO 1180
JT 1165 ? :IF TBETS>TWINS THEN ? "down ";
   :GOTO 1170
GJ 1167 ? "ahead ";
GP 1170 DIF=ABS(TBETS-TWINS):? "$";DIF/4;
   :IF INT(DIF/4)=DIF/4 THEN ? ".00";
MX 1175 IF DIF/4-INT(DIF/4)=0.5 THEN ? "0
   ";
QT 1180 ? :? :? "press trigger";
OC 1183 FOR A=1 TO 25:NEXT A
OJ 1184 IF STRIG(0)=1 THEN 1184
CF 1185 POKE 559,0:POKE 88,SM1:POKE 89,SM
   2
IW 1190 POKE 560,DIS1:POKE 561,DIS2:POKE
   559,34:FOR A=1 TO 50:NEXT A:GOTO 470
ZD 1999 REM OPENING
CL 2000 GOSUB 177:BET=0:NUM=20
LV 2001 POSITION 0,22:? "A ME AND XE PROG
   RAM";
QF 2005 POSITION 0,1:? "chet and the icem
   ans         keno":GOSUB 2015
XU 2010 POSITION 27,1:? "KENO":GOSUB 2015
   :GOTO 2005
QQ 2015 CG=RND(1):IF STRIG(0)=1 THEN RETU
   RN
YG 2020 POP :POSITION 0,1:? "  0 spots   0
    hits                    "
KM 2025 POSITION 0,22:? "
   ";
PJ 2030 GOTO 240
```

converts word displays into program lines *Article on page 42*

TEXT SCREEN CODEMAKER

LISTING 1

Don't type the TYPO II Codes!

```
PI 20000 REM TEXT SCREEN CODEMAKER
XN 20005 REM BY JOHN BERNDT
AI 20010 REM (c)1988, ANTIC PUBLISHING
BU 20020 REM (P/M CURSOR BY JERRY WHITE)
CV 20025 CH=(PEEK(106)-33)*256
WM 20030 FOR X=0 TO 180:READ C:POKE CH+X,
   C:NEXT X
XR 20035 CURSOR=USR(CH)
BT 20040 REM
BY 20045 TRAP 20425
CA 20050 ? "TEXT SCREEN CODEMAKER  by Jo
   hn Berndt":POKE 84,4
NA 20055 ? "STARTING LINE";:INPUT L1
IX 20060 IF L1<0 OR L1>19000 THEN 20055
NH 20065 ? "LINE INCREMENT";:INPUT IN
JO 20070 IF IN*24+L1>20000 OR IN<=0 THEN
   ? "TRY ANOTHER INCREMENT!":GOTO 20065
AZ 20075 ? "LEFT MARGIN(0-4)";:INPUT LM
DY 20080 IF LM<0 OR LM>4 THEN 20075
DA 20085 POKE 82,LM
NN 20090 CL=40-LM:MEM=CL*23:LN=L1-IN
DP 20095 DIM SCREEN$(MEM),TEXT$(1),NAME$(
   15),POS(23)
KH 20100 SCREEN$(1)=" ":SCREEN$(MEM)=" "
DN 20105 ? :? "               PRESS START TO B
   EGIN";
TA 20110 IF PEEK(53279)<>6 THEN 20110
YL 20115 GRAPHICS 0:POKE 752,1
GT 20120 INPUT #16,TEXT$
PL 20125 FOR Y=0 TO 22:X=40-LM
RR 20135 X=X-1
MJ 20140 IF X=-1 THEN 20160
AN 20145 LOCATE X,Y,CH
UF 20150 IF CH<>32 AND X=CL-1 THEN 20175
TC 20155 IF CH=32 THEN 20135
VC 20160 POSITION X+1,Y:PUT #6,253
SE 20170 IF X=38 THEN POSITION LM,Y+1:? C
   HR$(254)
OY 20175 NEXT Y
MH 20180 C=1
OG 20185 FOR Y=0 TO 22:FOR X=0 TO CL-1
BH 20195 LOCATE X,Y,CH
PJ 20200 SCREEN$(C,C)=CHR$(CH)
KW 20205 C=C+1:NEXT X:NEXT Y
SC 20220 FOR Y=0 TO 22:X=-1
AQ 20230 X=X+1:LOCATE X,Y,CH
OE 20240 IF CH=32 THEN 20230
HZ 20250 POS(Y)=X:NEXT Y
XW 20255 FOR Y=0 TO 22:LN=LN+IN:C=Y*CL+1
AP 20270 IF SCREEN$(C,C)="" THEN CH=1:GO
   TO 20340
VD 20275 GRAPHICS 0:POSITION LM,4:? LN;
UG 20280 IF CH AND POS(Y)<=6 THEN ? "POSI
   TION 0,";Y;":";:GOTO 20290
KE 20285 IF POS(Y)>6 OR CH THEN ? "POSITI
   ON";POS(Y);",";Y;":";
OW 20290 CH=0:? "?";CHR$(34);
SM 20300 IF POS(Y)<=6 THEN 20310
HH 20305 IF SCREEN$(C,C)=" " THEN C=C+1:G
   OTO 20305
CH 20310 IF SCREEN$(C,C)="" THEN 20330
OU 20315 ? SCREEN$(C,C);
YX 20320 IF INT(C/CL)=C/CL THEN CH=1:GOTO
    20330
ZZ 20325 C=C+1:GOTO 20310
WJ 20330 ? CHR$(34):GOSUB 20405
NT 20340 NEXT Y
OJ 20345 ? "":LIST L1,LN
WL 20350 ? "Save these lines";:INPUT TEXT
   $
```

continued on next page

```
JE 20355 IF TEXT$<>"Y" THEN 20370
CZ 20360 ? "DEVICE:FILENAME";:INPUT NAME$
HG 20365 LIST NAME$,L1,LN
EG 20370 ? "START OVER";:INPUT TEXT$
NF 20375 IF TEXT$<>"Y" THEN END
YR 20380 FOR X=L1 TO LN STEP IN
CZ 20385 ? "◘":POSITION LM,4:? X
RM 20390 GOSUB 20405
PA 20395 NEXT X
RX 20400 POKE 752,1:GOTO 20045
WR 20405 ? "CONT"
CH 20410 POSITION LM,0
PF 20415 POKE 842,13:STOP
YH 20420 POKE 842,12:RETURN
PW 20425 ? :? "◘ERROR #";PEEK(195);" HAS
   OCCURRED":?
BH 20430 TRAP 20425
SS 20432 FOR D=200 TO 2 STEP -1:NEXT D
NL 20435 GOTO (PEEK(186)+PEEK(187)*256)-5
SP 20440 REM P/M CURSOR M/L DATA
BX 20445 DATA 104,165,212,24,105,36,133,2
   12
IR 20450 DATA 165,213,105,0,133,213,162,7
UX 20455 DATA 160,144,177,212,157,0,6,136
ZW 20460 DATA 202,16,247,164,212,166,213,
   169
HP 20465 DATA 7,76,92,228,173,240,2,240
JY 20470 DATA 124,173,43,2,240,4,169,0
RC 20475 DATA 240,6,173,8,6,24,105,8
MX 20480 DATA 141,8,6,48,104,160,255,169
GC 20485 DATA 0,153,0,6,136,192,8,208
JZ 20490 DATA 248,169,10,141,194,2,141,20

OV 20495 DATA 208,169,1,141,111,2,141,27
TX 20500 DATA 208,169,0,141,10,208,169,0
CO 20505 DATA 141,7,212,169,2,141,29,208
VW 20510 DATA 169,58,141,47,2,141,0,212
SU 20515 DATA 166,85,164,84,165,87,13,147

ZU 20520 DATA 2,240,12,173,191,2,201,4
UG 20525 DATA 208,35,152,24,105,20,168,13
   8
OF 20530 DATA 10,10,105,48,141,2,208,152
HY 20535 DATA 10,10,10,105,39,168,162,7
TZ 20540 DATA 189,0,6,153,0,6,136,202
PR 20545 DATA 16,246,76,98,228,169,0,141
XI 20550 DATA 2,208,76,98,228
SU 20555 DATA 240,240,240,240,240,240,240
   ,240
```

ultimate banner maker even uses print shop fonts

TOP BANNER!

Article on page 20

LISTING 1

Don't type the TYPO II Codes!

```
SA 10 REM CUSTOM BANNER II
KU 20 REM BY JACOB DONHAM & LEE BRILLIANT

ZP 30 REM (c)1988, ANTIC PUBLISHING INC.
JG 90 GRAPHICS 0:GOTO 1000
KU 100 BCOUNT=0:BLANK$="":PX$="":FOR N=1
   TO SIZE:BLANK$(N,N)=CHR$(BG(PR)):PX$(N
   ,N)=CHR$(FG(PR)):NEXT N
RK 102 IF ROW=0 THEN ROW=1
IL 105 IF INV THEN TMP$=BLANK$:BLANK$=PX$
   :PX$=TMP$
XX 110 FOR N=0 TO ROW-1:HOLD(N)=PEEK(N*BY
   TE+MEM+BCOUNT):NEXT N
CF 120 CYCLE=128
CR 125 TMP$="":FOR N=ROW-1 TO 0 STEP -1:I
   F HOLD(N)>=CYCLE THEN TMP$(LEN(TMP$)+1
   )=PX$:HOLD(N)=HOLD(N)-CYCLE:GOTO 140
FL 130 TMP$(LEN(TMP$)+1)=BLANK$
UH 140 NEXT N:FOR N=1 TO WIDE:? #2;TMP$:I
   F PEEK(764)=28 THEN 200
QR 150 NEXT N:CYCLE=CYCLE/2
AW 160 COL=COL-1:IF COL=0 THEN 190
ZX 170 IF CYCLE>0.5 THEN 125
LU 180 BCOUNT=BCOUNT+1:GOTO 110
ZP 190 RETURN
VG 200 POKE 764,255:POP :POSITION 2,1:GOS
   UB 5000:X=4:OX=4:GOTO 1140
KW 300 BCOUNT=0:BLANK$="":PX$="":FOR N=1
   TO SIZE:BLANK$(N,N)=CHR$(BG(PR)):PX$(N
   ,N)=CHR$(FG(PR)):NEXT N
IA 310 IF INV THEN TMP$=BLANK$:BLANK$=PX$
   :PX$=TMP$
HD 320 N=COL:TMP$=""
HZ 330 HOLD(0)=PEEK(MEM+BCOUNT):CYCLE=128

FJ 340 IF HOLD(0)>=CYCLE THEN TMP$(LEN(TM
   P$)+1)=PX$:HOLD(0)=HOLD(0)-CYCLE:GOTO
   360
FR 350 TMP$(LEN(TMP$)+1)=BLANK$
WM 360 N=N-1:IF N<1 THEN 390
YG 370 CYCLE=CYCLE/2:IF CYCLE>0.5 THEN 34
   0
PY 380 BCOUNT=BCOUNT+1:GOTO 330
DU 390 FOR N=1 TO WIDE:? #2;TMP$:IF PEEK(
   764)=28 THEN 200
FZ 395 NEXT N:ROW=ROW-1:IF ROW>0 THEN BCO
   UNT=BCOUNT+1:GOTO 320
ZA 400 RETURN
NR 410 POKE 82,4:POKE 766,1:TMP$(1,LEN(ME
   SG$))=MESG$
DN 420 FOR N=1 TO 96 STEP 32:? TMP$(N,N+3
   1):NEXT N
LW 430 POKE 82,2:POKE 766,0:RETURN
FP 450 CMAX=0:RMAX=0:FOR N=1 TO 59:X=ASC(
   COL$(N)):OX=ASC(ROW$(N)):IF X>CMAX THE
   N CMAX=X
PY 460 IF OX>RMAX THEN RMAX=OX
OW 470 NEXT N:RETURN
UV 1000 DIM HT(100),WD(100),FG(100),BG(10
   0),TMP$(130),MESG$(100),MARGIN$(6),RES
   ET$(5),SMALL$(3),HOLD(38)
CZ 1001 DIM PX$(10),BLANK$(10),FN$(20),FT
   M$(32),DP$(10),DUMMY$(3),FONT$(11000),
   COL$(59),ROW$(59),LO$(59),HI$(59)
FT 1010 RESET$="◘@◘A◘":MARGIN$="◘M":SMALL
   $="◘B◘"
SY 1020 POKE 752,1:? CHR$(125)
IF 1030 REM
HM 1100 FOR I=1 TO 100:TMP$(I,I)=" ":HT(I
   )=10:WD(I)=7:FG(I)=88:BG(I)=32:NEXT I:
   H=1:V=1:C=1:R=1:CHB=57344:GOSUB 5000
CV 1130 X=1:OX=1:OPEN #1,4,0,"K:":HC=1
VO 1140 POKE 702,64:POKE 694,0:POSITION 1
   0,OX+6:? " ":POSITION 10,X+6:? "◘◘":GE
   T #1,K:OX=X
BY 1150 IF K=ASC("=") THEN X=X+1
UJ 1160 IF K=ASC("-") THEN X=X-1
ON 1165 IF K=155 THEN 1200
BX 1170 IF X<1 THEN X=5
BK 1180 IF X>5 THEN X=1
QD 1190 GOTO 1140
XZ 1200 ON X GOTO 1500,2000,3200,3000,399
   0
CL 1500 POSITION 9,6:? "┌──────────────────┐"
   :POSITION 9,7:? "│ Edit Message │"
WC 1510 ? " ┌───────────────────────────────
   ─────┐":FOR I=1 TO 3:? " │
                      │":NEXT I
BO 1520 ? " └───────────────────────────────
   ─────┘"
MA 1521 TMP$(1)=" ":TMP$(96)=" ":TMP$(2)=
   TMP$:PMAX=LEN(MESG$)+1:P=0:POSITION 4,
   9:IF MESG$="" THEN PMAX=1:GOTO 1530
XM 1522 GOSUB 410
UA 1530 P=1:H=4:V=9:GOSUB 1621
HK 1540 GET #1,K
AP 1545 IF K=155 THEN 1628
TA 1550 IF K=27 AND E=0 AND PS=0 THEN E=1
   :POSITION H,V:? CHR$(27);:GOTO 1540
OY 1555 IF E=1 THEN E=0:GOTO 1610
OU 1560 IF K=126 THEN POSITION H,V:GOSUB
   1621:P=P-(P>1):H=H-1:GOTO 1624
EU 1565 IF K=28 AND V>9 THEN GOSUB 1621:V
   =V-1:GOSUB 1621:P=P-32:GOTO 1540
```

```
RC 1570 IF K=29 AND V<11 THEN GOSUB 1621:
   V=V+1:GOSUB 1621:P=P+32:GOTO 1540
KG 1580 IF K=30 AND H>4 THEN GOSUB 1621:H
   =H-1:GOSUB 1621:P=P-1:GOTO 1540
DN 1585 IF K=31 AND H<35 THEN GOSUB 1621:
   H=H+1:GOSUB 1621:P=P+1:GOTO 1540
LM 1586 IF K>27 AND K<32 THEN 1540
DN 1590 IF PS=1 THEN IF K<32 OR K>90 THEN
    1540
CC 1595 IF K=125 OR K>252 OR K=127 THEN 1
   540
BM 1600 IF H<4 AND V>9 THEN H=35:V=V-1:IF
    H<4 THEN H=4
RI 1610 TMP$(P,P)=CHR$(K):P=P+1:IF P>96 T
   HEN P=96:GOTO 1540
JW 1615 POSITION H,V:? CHR$(K):H=H+1:IF H
   >35 AND V<11 THEN V=V+1:H=4
QT 1619 IF P>PMAX THEN PMAX=P
BA 1620 GOSUB 1621:GOTO 1540
MD 1621 LOCATE H,V,X:X=X+128:IF X>255 THE
   N X=X-256
UV 1622 INV=128*(X>127):IF ((X-INV>26)*(X
   -INV<32))+(X-INV>124) THEN POSITION H,
   V:? "■";
ID 1623 POSITION H,V:? CHR$(X):RETURN
TP 1624 IF H<4 AND V>9 THEN H=35:V=V-1
EX 1625 IF P=PMAX-1 THEN PMAX=P
SG 1626 IF H<4 THEN H=4:P=1
XY 1627 POSITION H,V:? "■":TMP$(P,P)=" ":
   GOTO 1540
RR 1628 IF P=1 THEN MESG$="":GOTO 1630
WF 1629 MESG$=TMP$(1,PMAX-1)
EB 1630 POSITION 2,1:GOSUB 5000
LA 1710 X=1:OX=1:GOTO 1140
ZE 2000 POSITION 9,7:? "┌────────────────
   ────┐":POSITION 9,8:? "│ Change Paramet
   ers │"
MM 2010 POSITION 9,9:? "├────────────────
   ────┤":POSITION 9,10:? "│
   │"
YZ 2020 POSITION 9,11:? "│  Individual
       │":POSITION 9,12:? "│  Overall
       │"
KU 2030 POSITION 9,13:? "│  Effects
       │":POSITION 9,14:? "│
       │"
ZI 2040 POSITION 9,15:? "└────────────────
   ────┘"
JL 2050 X=1:OX=1
MH 2060 POSITION 11,OX+10:? " ":POSITION
   11,X+10:? "■■":GET #1,K:OX=X
CD 2070 IF K=ASC("=") THEN X=X+1
UO 2080 IF K=ASC("-") THEN X=X-1
QO 2090 IF K=155 THEN 2130
RH 2095 IF K=27 THEN POSITION 2,1:GOSUB 5
   000:X=2:OX=2:GOTO 1140
ZP 2100 IF X<1 THEN X=3
ZU 2110 IF X>3 THEN X=1
QI 2120 GOTO 2060
TU 2130 ON X GOTO 2150,2300,2500
MM 2150 POSITION 11,10:? "┌──────────────┐"
   :POSITION 11,11:? "│ Individual │"
WW 2160 ? " ├─────────────────────────────
   ─────┤":FOR I=1 TO 3:? " │
                           │":NEXT I
BW 2170 ? " └─────────────────────────────
   ─────┘"
QV 2175 ? "                ":? "
   ":? "                   "
ON 2180 POKE 82,4:PMAX=LEN(MESG$)+1:P=0:P
   OSITION 4,13:IF MESG$="" THEN ? "**NO
   MESSAGE**":GOTO 2200
UM 2190 GOSUB 410:GOTO 2200
NX 2200 POKE 82,2:P=1:H=4:V=13:GOSUB 1621
GW 2210 GET #1,K
OC 2220 IF K=155 THEN 4000
AF 2230 IF K=27 THEN POSITION 2,1:GOSUB 5
   000:GOTO 2000
OE 2235 IF K=28 AND V>13 THEN GOSUB 1621:
   V=V-1:GOSUB 1621:P=P-32:GOTO 2210
AY 2240 IF K=29 AND V<15 AND P+32<PMAX TH
   EN GOSUB 1621:V=V+1:GOSUB 1621:P=P+32:
   GOTO 2210
WR 2250 IF K=30 AND H>4 THEN GOSUB 1621:H
   =H-1:GOSUB 1621:P=P-1:GOTO 2210
LO 2260 IF K=31 AND H<35 AND P+1<PMAX THE
   N GOSUB 1621:H=H+1:GOSUB 1621:P=P+1:GO
   TO 2210
PO 2270 IF P>96 THEN P=96:GOTO 2210
PN 2280 GOTO 2210
KA 2300 POSITION 10,11:? "┌───────────┐":PO
   SITION 10,12:? "│ Overall  │":POSITION
   10,13:? "├─────────────┤"
TY 2310 POSITION 10,14:? "│Foregr:     │":
   POSITION 10,15:? "│Backgr:     │":POSIT
   ION 10,16:? "│Height:    │"
NN 2320 POSITION 10,17:? "│ Width:     │":
   POSITION 10,18:? "└─────────────┘"
MQ 2330 W=14:GOSUB 2400:IF VL<256 THEN FO
   R RG=1 TO LEN(MESG$):FG(RG)=VL:NEXT RG
DW 2340 W=15:GOSUB 2400:IF VL<256 THEN FO
   R RG=1 TO LEN(MESG$):BG(RG)=VL:NEXT RG
VS 2350 W=16:GOSUB 2400:IF VL<11 THEN FOR
    RG=1 TO LEN(MESG$):HT(RG)=VL:NEXT RG
TH 2360 W=17:GOSUB 2400:IF VL<11 THEN FOR
    RG=1 TO LEN(MESG$):WD(RG)=VL:NEXT RG
CJ 2370 POSITION 2,1:GOSUB 5000:X=1:OX=1:
   GOTO 2000
PS 2400 J=1:DP$="   "
OT 2405 POSITION J+17,W:? "■":GET #1,K
WK 2410 IF K>ASC("0")-1 AND K<ASC("9")+1
   AND J<4 THEN J=J+1:DP$(J-1,J-1)=CHR$(K
   )
KH 2420 IF K=126 AND J>1 THEN J=J-1:DP$(J
   ,J)=" ":POSITION J+18,W:? " "
OC 2430 IF K=155 THEN TRAP 2440:DUMMY$=DP
   $(1,J-1):VL=VAL(DUMMY$):POSITION J+17,
   W:? " ":RETURN
CR 2435 POSITION 18,W:? DP$:GOTO 2405
OQ 2440 VL=256:POSITION J+17,W:? " ":RETU
   RN
MZ 2500 POSITION 10,12:? "┌──────────┐":PO
   SITION 10,13:? "│ Effects │":POSITION
   10,14:? "├─────────────────┤"
SI 2510 POSITION 10,15:? "│
     │":POSITION 10,16:? "│  Resp. Foregr
   . │"
VA 2520 POSITION 10,17:? "│  Resp. Backgr
   . │":POSITION 10,18:? "│  Growing
   │"
GX 2530 POSITION 10,19:? "│  Shrinking
     │":POSITION 10,20:IF VERT=0 THEN ? "
   │ Vertical        │"
EK 2535 IF VERT=1 THEN ? "│  Horizontal
   │"
MJ 2540 POSITION 10,21:? "└───────────────
   ──┘":X=1:OX=1
RL 2550 TRAP 2920
BS 2560 POSITION 12,OX+15:? " ":POSITION
   12,X+15:? "■■":GET #1,K:OX=X
CN 2570 IF K=ASC("=") THEN X=X+1
UY 2580 IF K=ASC("-") THEN X=X-1
MS 2583 IF K=27 THEN POSITION 2,1:X=1:OX=
   1:GOSUB 5000:GOTO 2000
UU 2585 IF K=155 THEN 2620
CM 2590 IF X<1 THEN X=5
AX 2600 IF X>5 THEN X=1
SX 2610 GOTO 2560
ZI 2620 ON X GOTO 2700,2750,2800,2850,287
   0
WK 2700 FOR I=1 TO LEN(MESG$):FG(I)=ASC(M
   ESG$(I,I)):NEXT I:GOTO 2900
SR 2750 FOR I=1 TO LEN(MESG$):BG(I)=ASC(M
   ESG$(I,I)):NEXT I:GOTO 2900
EX 2800 IC=10/LEN(MESG$):WH=0:FOR I=1 TO
   LEN(MESG$):WH=WH+IC
HN 2805 IF WH<1 THEN WH=1
WM 2810 IF WH>10 THEN WH=10
BY 2815 HW=INT(WH):WD(I)=HW:HT(I)=HW:NEXT
    I:GOTO 2900
FK 2850 IC=10/LEN(MESG$):WH=0:FOR I=LEN(M
   ESG$) TO I STEP -1:WH=WH+IC
IC 2855 IF WH<1 THEN WH=1
XB 2860 IF WH>10 THEN WH=10
CN 2865 HW=INT(WH):WD(I)=HW:HT(I)=HW:NEXT
    I:GOTO 2900
RG 2870 VERT= NOT VERT
HZ 2900 POSITION 11,15:? "┌────────┐":POSIT
   ION 11,16:? "│ Done │":POSITION 11,17:
   ? "└────────┘"
JO 2910 GET #1,K:GOTO 2500
TN 2920 POSITION 11,15:? "┌───────────┐":PO
   SITION 11,16:? "│  No      │":POSITION
   11,17:? "│ Message │"
MQ 2930 POSITION 11,18:? "└───────────┘":GE
   T #1,K:GOTO 2500
```

continued on next page

```
HR 2999 END
IT 3000 POSITION 9,9:? "┌────────────────┐":POSITION 9,10:? "│ Print Banner │":POSITION 9,11:? "├────────────────┤"
RC 3005 CLOSE #2:TRAP 40000:OPEN #2,8,0,"P:":GOTO 3017
FY 3010 POSITION 9,12:? "│   Printer   │":POSITION 9,13:? "│   Is Not   │":POSITION 9,14:? "│ Responding │"
ZK 3015 POSITION 9,15:? "└────────────────┘":GET #1,K:CLOSE #2:GOTO 3005
VI 3017 IF LEN(MESG$)=0 THEN GOTO 3026
GF 3020 POSITION 9,12:? "│              │":POSITION 9,13:? "│   Printing   │":POSITION 9,14:? "│              │"
DW 3025 POSITION 9,15:? "└────────────────┘":GOTO 3029
RN 3026 POSITION 9,12:? "│     No      │":POSITION 9,13:? "│   Message   │":POSITION 9,14:? "│              │"
PF 3027 POSITION 9,15:? "└────────────────┘":GET #1,K:GOTO 3180
ZD 3029 ? #2;RESET$:FN$=""
BP 3030 FOR PR=1 TO LEN(MESG$):IC=ASC(MESG$(PR)):SIZE=HT(PR):WIDE=WD(PR):INV=128*(IC>127)
JO 3035 IF PS THEN INV=0:GOTO 3080
WG 3040 MARGIN=0:IF VERT THEN WIDE=HT(PR):SIZE=WD(PR):MARGIN=40-SIZE*4
WF 3050 ? #2;MARGIN$;CHR$(MARGIN):IC=IC-INV:IF IC<96 THEN IC=IC-32
FQ 3060 IF IC<0 THEN IC=IC+96
PE 3070 MEM=IC*8+CHB:ROW=8:COL=8:BYTE=1:GOSUB 100+VERT*200:NEXT PR:? CHR$(125):GOSUB 5000:X=4:OX=4:GOTO 1140
DG 3080 IC=IC-31:N=ASC(COL$(IC)):BYTE=INT((N-1)/8)+1:COL=N:IF IC=1 THEN COL=N*WIDE:GOTO 3160
IZ 3090 REM
IA 3100 REM
GK 3110 ROW=ASC(ROW$(IC)):MEM=ASC(LO$(IC))+256*ASC(HI$(IC))-BASELINE+ADR(FONT$)
CX 3120 IF VERT AND WIDE*CMAX>135 THEN WIDE=WIDE-1:GOTO 3120
RH 3125 IF VERT THEN MARGIN=68-COL*WIDE/2:H=SIZE:SIZE=WIDE:WIDE=H:GOTO 3140
GZ 3130 IF SIZE*RMAX>135 THEN SIZE=SIZE-1:GOTO 3130
XB 3135 MARGIN=136-ROW*SIZE-(136-RMAX*SIZE)/2
UI 3140 ? #2;SMALL$;MARGIN$;CHR$(MARGIN):GOSUB 100+VERT*200:COL=2*SIZE:IF VERT THEN COL=2*WIDE
EO 3160 FOR S=1 TO COL:? #2;CHR$(10):NEXT S
UJ 3170 NEXT PR
II 3180 ? CHR$(125):GOSUB 5000:X=4:OX=4:GOTO 1140
YH 3200 POSITION 9,8:? "┌──────────────────────┐":POSITION 9,9:? "│ Font Selections │"
UW 3210 POSITION 9,10:? "├──────────────────────┤":POSITION 9,11:? "│                      │"
FX 3220 POSITION 9,12:? "│ 8x8 ATARI Fonts │":POSITION 9,13:? "│ Print Shop Fonts │"
UM 3230 POSITION 9,14:? "│                      │":POSITION 9,15:? "└──────────────────────┘"
KE 3235 X=1:OX=1
OV 3240 POSITION 11,OX+11:? " ":POSITION 11,X+11:? "▶":GET #1,K:OX=X
CC 3250 IF K=ASC("=") THEN X=X+1
SJ 3260 IF K=ASC("-") THEN X=X+1
BI 3265 IF K=27 THEN POSITION 2,1:X=3:OX=3:GOSUB 5000:GOTO 1140
QJ 3270 IF K=155 THEN 3300
ZW 3280 IF X<1 THEN X=2
AK 3290 IF X>2 THEN X=1
SJ 3295 GOTO 3240
BS 3300 ? CHR$(125):? "┌──────────────────────────────┐":? "│     ** Font Loader **     │"
BB 3310 ? "├──────────────────────────────────────┤":? "│ Insert Font Disk and Press RETURN │"
HP 3312 ? "└──────────────────────────────────────┘"
YX 3315 GET #1,K:IF K=155 THEN 3320
PA 3316 IF K=27 THEN ? CHR$(125):GOSUB 5000:GOTO 3200
TM 3317 GOTO 3315
FC 3320 ? "┌──────────────────────────┐":ON X GOTO 3350,3500
IT 3350 P=0:PS=0:TRAP 5900:OPEN #3,6,0,"D:*.FNT":? "│ STANDARD";CHR$(127);
VT 3360 INPUT #3;FTM$:IF FTM$(11,13)<>"FNT" THEN 3360
US 3370 ? FTM$(3,10);" │":P=1
ZT 3380 INPUT #3;FTM$:IF FTM$(11,13)<>"FNT" THEN 3380
GS 3385 ? "│ ";FTM$(3,10);CHR$(127);:P=0:GOTO 3360
PQ 3390 CLOSE #3:TRAP 40000:IF P=0 THEN ? "          │"
ZO 3395 ? "└──────────────────────────┘":POKE 752,0:? "Enter File Name    ◀◀◀";:INPUT FTM$
IF 3400 IF FTM$="" THEN 3300
WX 3405 IF FTM$="STANDARD" THEN CHB=57344:X=3:OX=3:? CHR$(125):GOSUB 5000:GOTO 1140
CU 3410 FN$="D:":FN$(LEN(FN$)+1)=FTM$:FN$(LEN(FN$)+1)=".FNT"
ZJ 3420 TRAP 5900:OPEN #3,4,0,FN$
NS 3430 POKE 882,7:CHB=ADR(FONT$):HI=INT(CHB/256):LO=CHB-256*HI:POKE 884,LO:POKE 885,HI:POKE 888,0:POKE 889,4
AP 3440 A=USR(ADR("h█0 V█")):CLOSE #3:TRAP 40000:PRINT CHR$(125):GOSUB 5000:X=3:OX=3:GOTO 1140
WG 3500 RESTORE 11000:? "│0 NEXT MENU     │":IF PS=0 THEN PS=1:MESG$=""
PA 3510 P=1:FOR SECTOR=362 TO 365:GOSUB 10000
CB 3520 FOR N=1 TO 128 STEP 32:FTM$(1,32)=TMP$(N):IF FTM$(1,1)<>"F" THEN 3580
KB 3530 IF FTM$(2,3)="0." THEN 3560
YT 3535 IC=ASC(FTM$(2))-48:IF IC<0 OR IC>9 THEN 3580
XV 3540 POKE 182,IC:READ FTM$
VR 3550 ? "│";P;" ";FTM$:GOTO 3570
LK 3560 ? "│";P;" ";FTM$(4,16)
AM 3570 POSITION 24,P+7:? "│":P=P+1
HN 3580 NEXT N:NEXT SECTOR:P=P-1:? "└──────────────────────────┘":POKE 752,0
PB 3590 TRAP 3590:POSITION 2,P+9:? "Enter your selection    ◀◀◀";:INPUT F
AG 3600 IF F<0 OR F>P THEN 3590
VB 3610 TRAP 40000:IF F=0 THEN 3300
MR 3620 IC=1:FOR SECTOR=362 TO 365:GOSUB 10000
GP 3630 FOR N=1 TO 128 STEP 32:FTM$(1,32)=TMP$(N)
PJ 3640 IF FTM$(1,1)<>"F" THEN 3670
LV 3650 IF IC=F THEN 3700
PK 3660 IC=IC+1
DA 3670 NEXT N:NEXT SECTOR
YG 3700 SECTOR=ASC(FTM$(17))+256*ASC(FTM$(18)):FSIZE=ASC(FTM$(21))+ASC(FTM$(22))*256:LAST=INT(FSIZE/126)+SECTOR
NS 3710 POKE 752,1:? "LOADING"
GU 3720 BASELINE=24812:GOSUB 10000:IF FTM$(2,3)="0." THEN 3760
RC 3730 COL$=TMP$(1,59):ROW$=TMP$(60,118):LO$=TMP$(119,126)
MB 3740 SECTOR=SECTOR+1:GOSUB 10000:LO$(9)=TMP$(1,51):HI$=TMP$(52,110)
LN 3750 FONT$=TMP$(111,126):GOTO 3780
UN 3760 COL$=TMP$(13,71):ROW$=TMP$(72,126):SECTOR=SECTOR+1:GOSUB 10000:ROW$(56)=TMP$(1,4)
ZG 3770 LO$=TMP$(5,63):HI$=TMP$(64,122):FONT$=TMP$(123,126)
KV 3780 SECTOR=SECTOR+1:IF SECTOR>LAST THEN POKE 755,2:? CHR$(125):GOSUB 450:GOSUB 5000:X=1:OX=1:GOTO 1140
GZ 3790 GOSUB 10000:FONT$(LEN(FONT$)+1)=TMP$(1,126):POKE 755,( NOT PEEK(755))*2:GOTO 3780
FB 3990 GRAPHICS 0:END
HS 3999 END
RA 4000 POSITION 4,16:? "┌──────────────┐":POSITION 4,17:? "│Foregr:      │":POSITION 4,18:? "│Backgr:      │"
```

```
MF 4010 POSITION 4,19:? "|Height:      |":P
   OSITION 4,20:? "| Width:      |":POSITIO
   N 4,21:? "└──────────────┘"
BI 4020 POSITION 12,17:? FG(P):POSITION 1
   2,18:? BG(P):POSITION 12,19:? HT(P):PO
   SITION 12,20:? WD(P)
YZ 4030 DP$=STR$(FG(P)):W=17:Z=LEN(DP$)
NK 4040 GOSUB 4200:IF VL<256 THEN FG(P)=V
   L
XW 4050 DP$=STR$(BG(P)):W=18:Z=LEN(DP$)
IS 4060 GOSUB 4200:IF VL<256 THEN BG(P)=V
   L
KN 4070 DP$=STR$(HT(P)):W=19:Z=LEN(DP$)
TL 4080 GOSUB 4200:IF VL<11 THEN HT(P)=VL

BV 4090 DP$=STR$(WD(P)):W=20:Z=LEN(DP$)
QU 4100 GOSUB 4200:IF VL<11 THEN WD(P)=VL

SW 4110 POSITION 4,16:? "──────────────":F
   OR S=17 TO 21:POSITION 4,S:? "
        ":NEXT S:GOTO 2210
PW 4200 J=Z+1
KF 4203 POSITION J+11,W:? "■":GET #1,K
WZ 4205 IF K>ASC("0")-1 AND K<ASC("9")+1
   AND J<4 THEN J=J+1:DP$(J-1,J-1)=CHR$(K
   )
WM 4210 IF K=126 AND J>1 THEN J=J-1:DP$(J
   ,J)=" ":POSITION J+12,W:? " "
VP 4220 IF K=155 THEN TRAP 4203:DUMMY$=DP
   $(1,J-1):VL=VAL(DUMMY$):POSITION J+11,
   W:? " ":RETURN
VO 4240 POSITION 12,W:? DP$:GOTO 4203
HT 4999 END
SX 5000 ? "        ┌─────────────────────────
   ┐"
PH 5005 POKE 752,1
VQ 5010 ? "        |
   |"
YM 5020 ? "        | Custom Banner Printer
   |"
VW 5030 ? "        |
   |"
IQ 5040 ? "        ├─────────────────────────
   ┤"
WC 5050 ? "        |
   |"
GT 5060 ? "        |  Edit Message
   |"
XU 5070 ? "        |  Change Parameters
   |     "
DZ 5080 ? "        |  Font Selections
   |     "
BP 5090 ? "        |  Print Banner
   |     "
MQ 5100 ? "        |  Quit
   |     "
AS 5110 ? "        |
   |     "
AK 5120 ? "        └─────────────────────────
   ┘     "
YJ 5130 FOR X=1 TO 9:? "
                    ":NEXT X
AK 5210 RETURN
WC 5900 CLOSE #3:IF PEEK(195)<>136 THEN G
   OSUB 5990:GOSUB 5950:GOTO 3300
UX 5905 GOTO 3390
PJ 5950 ? "┌───────────────────────┐":? "|DI
   SK ERROR ";PEEK(195);CHR$(127);"|":? "
   |   PRESS RETURN      |"
TM 5955 ? "└───────────────────────┘"
KJ 5960 GET #1,K:IF K<>155 THEN 5960
BQ 5970 RETURN
IK 5990 SOUND 0,20,6,10:A=1^1:SOUND 0,25,
   6,10:A=1^1:SOUND 0,0,0,0:RETURN
DR 10000 TMP$(129)="":MEM=ADR(TMP$):POKE
   773,INT(MEM/256):POKE 772,MEM-INT(MEM/
   256)*256
VJ 10010 POKE 779,INT(SECTOR/256):POKE 77
   8,SECTOR-INT(SECTOR/256)*256:POKE 769,
   1:POKE 770,82:H=USR(ADR("h S▫◆"))
XD 10020 IF PEEK(771)=1 THEN RETURN
HS 10030 POKE 195,PEEK(771):GOTO 5900
YK 11000 DATA STANDARD,RSVP,ALEXIA,NEWS,T
   ECH,PARTY,BLOCK,TYPEWRITER,STENCIL
```

spinning the shapes of your imagination

EASY 3-D WIRE FRAMES

Article on page 22

LISTING 1

Don't type the TYPO II Codes!

```
QF 10 REM WIRE-FRAME GENERATOR
LE 20 REM BY ROBERT GEDDINGS
QH 30 REM (c)1988, ANTIC PUBLISHING
KH 40 GOSUB 1250:REM INIT
RQ 50 GOSUB 780:REM MENU
ND 60 GOSUB 550:REM GET CONTROL POINTS
GD 70 POKE 82,0
MI 80 REM SPIN THE CONTROL POINTS
EC 90 FOR CNTR=1 TO CPTS
FK 100 INCR=360/SIDES:COUNTER=0
ZB 110 YCENTER=0:XCENTER=0:R=DIA(CNTR)
TK 130 FOR PHI=0 TO 360 STEP INCR
HC 140 COUNTER=COUNTER+1:IF COUNTER>SIDES
    THEN 180
JF 150 X=R*COS(PHI):Y=R*SIN(PHI)
OS 160 X=XCENTER+X:Y=YCENTER+Y
ZB 170 WIREX(CNTR,COUNTER)=X:WIREY(CNTR,C
   OUNTER)=Y
PJ 180 NEXT PHI:NEXT CNTR
RE 190 REM
XX 200 REM DISPLAY WIRE-FRAME IN 3-D
QP 210 REM
SX 220 REM DRAW THE ARCS
GM 230 GRAPHICS 8:POKE 710,0:POKE 709,15
VV 240 PLOT 0,0:DRAWTO 319,0:DRAWTO 319,1
   59:DRAWTO 0,159:DRAWTO 0,0
EU 250 CNTR=0
NL 251 CNTR=CNTR+1:IF CNTR>CPTS THEN 370
LG 260 X=WIREX(CNTR,1):Y=WIREY(CNTR,1):Z=
   WIREZ(CNTR):GOSUB 500
KB 270 IF SX>318 OR SY>158 THEN ? "Fittin
   g to Screen....":D=D-20:GOTO 90
ZZ 280 IF SX<1 OR SY<1 THEN ? "Fitting to
    Screen....":D=D-20:GOTO 90
AZ 290 PLOT SX,SY:OLDSX=SX:OLDSY=SY
DC 300 COUNTER=1
DV 305 COUNTER=COUNTER+1:IF COUNTER>SIDES
    THEN 340
CK 307 X=WIREX(CNTR,COUNTER):Y=WIREY(CNTR
   ,COUNTER):Z=WIREZ(CNTR):GOSUB 500
JQ 310 IF SX>318 OR SY>158 THEN ? "Fittin
   g to Screen....":D=D-20:GOTO 90
ZO 320 IF SX<1 OR SY<1 THEN ? "Fitting to
    Screen....":D=D-20:GOTO 90
IZ 330 DRAWTO SX,SY:GOTO 305
HD 340 DRAWTO OLDSX,OLDSY:GOTO 251
QY 350 REM
XG 360 REM DRAW THE DEPTH LINES
JG 370 FOR CNTR=1 TO SIDES
EV 380 X=WIREX(1,CNTR):Y=WIREY(1,CNTR):Z=
   WIREZ(1):GOSUB 500:PLOT SX,SY
GR 390 FOR COUNTER=2 TO CPTS:X=WIREX(COUN
   TER,CNTR):Y=WIREY(COUNTER,CNTR):Z=WIRE
   Z(COUNTER):GOSUB 500:DRAWTO SX,SY
RQ 400 NEXT COUNTER:NEXT CNTR
LV 410 TRAP 420
ZS 420 ? :? :? :? "Type View, New, Print,
    Save or Quit:";:INPUT OPTION$
```

continued on next page

```
AJ 430 IF OPTION$(1)="N" THEN RUN
OR 440 IF OPTION$(1)="Q" THEN GRAPHICS 0:
   END
OU 450 IF OPTION$(1)="S" THEN 1290
EK 460 IF OPTION$(1)="P" THEN 1400
SH 470 IF OPTION$(1)="V" THEN 1570
NZ 480 GOTO 420
LH 490 REM GENERATE 3-D COORDINATES
VT 500 XA=CR1*X-SR1*Y:YA=SR1*X+CR1*Y:X=CR
   2*XA+SR2*Z:ZA=CR2*Z-SR2*XA:Y=CR3*YA-SR
   3*ZA:Z=SR3*YA+CR3*ZA:X=X+MX:Y=Y+MY
MI 510 Z=Z+MZ:SX=D*X/Y:SY=D*Z/Y:SX=SX+159
   :SY=SY+80:RETURN
AA 530 REM A LITTLE CAD
QY 540 REM
DP 550 GRAPHICS 8:POKE 710,0:POKE 709,15:
   COLOR 1
QB 560 PLOT 0,0:DRAWTO 319,0:DRAWTO 319,1
   59:DRAWTO 0,159:DRAWTO 0,0:PLOT 160,0:
   DRAWTO 160,159
JX 570 POKE 752,1
GL 580 FOR CNTR=1 TO CPTS
LA 590 LOCATE X+160,Y+80,COLOUR:PLOT X+16
   0,Y+80:XOLD=X:YOLD=Y:COLOR COLOUR:PLOT
    XOLD+160,YOLD+80:COLOR 1
ER 595 ? "⊞Point=";CNTR;"  X=";X;"  Y=";Y
   *-1;"      "
YD 600 IF STRIG(0)=0 THEN 710
NF 610 A=STICK(0):IF A=15 THEN 590
LK 620 TX=(A=5 OR A=6 OR A=7)-(A=9 OR A=1
   0 OR A=11):TY=(A=5 OR A=9 OR A=13)-(A=
   6 OR A=10 OR A=14)
ZA 630 IF (X+TX)<-158 THEN X=-158:GOTO 68
   0
CG 640 IF (X+TX)>158 THEN X=158:GOTO 680
ZZ 650 IF (Y+TY)<-78 THEN Y=-78:GOTO 680
KI 660 IF (Y+TY)>78 THEN Y=78:GOTO 680
KJ 670 X=X+TX:Y=Y+TY
EB 680 ? "⊞Point=";CNTR;"  X=";X;"  Y=";Y
   *-1;"      "
JG 690 IF STRIG(0)<>1 THEN 710
QV 700 GOTO 590
XY 710 SOUND 0,100,10,10:FOR DELAY=1 TO 5
   0:NEXT DELAY:SOUND 0,0,0,0
BC 720 DIA(CNTR)=X:WIREZ(CNTR)=Y
JK 730 COLOR 1:PLOT (DIA(1)+160),(WIREZ(1
   )+80)
CA 740 FOR CTR=1 TO CNTR:DRAWTO (DIA(CTR)
   +160),(WIREZ(CTR)+80):NEXT CTR:NEXT CN
   TR
IJ 750 ? :? :? :? "Spinning the Profile..
   ...     "
ZP 760 RETURN
WN 770 REM MENU
YM 780 GRAPHICS 0:POKE 710,0:POKE 709,12
PG 790 POSITION 16,0:? "S P I N":POSITION
    9,1:? "A WIRE-FRAME GENERATOR"
TY 800 POSITION 11,3:? "by Robert Gedding
   s"
LC 810 ? :? "New or Load file: ";:INPUT O
   PTION$:IF OPTION$(1)<>"L" AND OPTION$(
   1)<>"N" THEN ? "⊞⊞⊞":GOTO 810
YZ 820 IF OPTION$(1)="L" THEN 1110
PJ 830 TRAP 860
FC 840 ? :? "Enter # Control Points [30 m
   ax]:";:INPUT CPTS
OY 850 IF CPTS>1 AND CPTS<31 THEN 870
JK 860 ? "⊞⊞⊞":GOTO 840
NN 870 TRAP 900
GL 880 ? :? "Enter # Sides [30 max]:";:IN
   PUT SIDES
SG 890 IF SIDES>1 AND SIDES<31 THEN 910
LX 900 ? "⊞⊞⊞":GOTO 880
TS 910 ? :? "Use Default View [Y/N]: ";:I
   NPUT OPTION$:IF OPTION$(1)<>"Y" AND OP
   TION$(1)<>"N" THEN ? "⊞⊞⊞":GOTO 910
OV 920 IF OPTION$(1)="Y" THEN 1070
OY 930 TRAP 940
ZZ 940 POSITION 2,13:? "Magnification= ";
   D:POSITION 16,13:INPUT D
PY 950 TRAP 960
QX 960 POSITION 2,14:? "MX= ";MX:POSITION
    5,14:INPUT MX
QY 970 TRAP 980
XJ 980 POSITION 2,15:? "MY= ";MY:POSITION
    5,15:INPUT MY
IQ 990 TRAP 1000
CE 1000 POSITION 2,16:? "MZ= ";MZ:POSITIO
   N 5,16:INPUT MZ
LZ 1010 TRAP 1020
MZ 1020 POSITION 2,17:? "Yaw (Degrees)= "
   ;R1:POSITION 16,17:INPUT R1
NF 1030 TRAP 1040
XG 1040 POSITION 2,18:? "Roll (Degrees)=
   ";R2:POSITION 17,18:INPUT R2
OL 1050 TRAP 1060
DB 1060 POSITION 2,19:? "Pitch (Degrees)=
    ";R3:POSITION 18,19:INPUT R3
FE 1070 SR1=SIN(R1):SR2=SIN(R2):SR3=SIN(R
   3):CR1=COS(R1):CR2=COS(R2):CR3=COS(R3)
UD 1080 DIM WIREX(CPTS,SIDES),WIREY(CPTS,
   SIDES),WIREZ(CPTS),DIA(CPTS):RETURN
IX 1090 REM
JA 1100 REM LOAD A FILE
OE 1110 ? :? "Filename to load [Dn:Filena
   me.Ext]:";:INPUT FILE$
RO 1120 TRAP 780
JT 1130 CLOSE #1:OPEN #1,4,0,FILE$:INPUT
   #1,CPTS:INPUT #1,SIDES:INPUT #1,MX:INP
   UT #1,MY:INPUT #1,MZ
LT 1140 INPUT #1,D:INPUT #1,R1:INPUT #1,R
   2:INPUT #1,R3
YM 1150 DIM WIREX(CPTS,SIDES),WIREY(CPTS,
   SIDES),WIREZ(CPTS),DIA(CPTS)
NO 1160 TRAP 1220
IN 1170 FOR CNTR=1 TO SIDES:FOR COUNTER=1
    TO CPTS:INPUT #1,VALUE:INPUT #1,VALUE
   2:WIREX(COUNTER,CNTR)=VALUE
CS 1180 WIREY(COUNTER,CNTR)=VALUE2:NEXT C
   OUNTER:NEXT CNTR
GN 1190 FOR CNTR=1 TO CPTS:INPUT #1,VALUE
   :INPUT #1,VALUE2:WIREZ(CNTR)=VALUE:DIA
   (CNTR)=VALUE2:NEXT CNTR:CLOSE #1
EN 1200 SR1=SIN(R1):SR2=SIN(R2):SR3=SIN(R
   3):CR1=COS(R1):CR2=COS(R2):CR3=COS(R3)
ZN 1210 POP :GOTO 230
MT 1220 ? "Problem with File - Try again.
   ":FOR DELAY=1 TO 200:NEXT DELAY:POP :G
   OTO 780
IJ 1230 REM
ZC 1240 REM INIT.
NS 1250 DIM FILE$(15),OPTION$(1)
AJ 1255 DEG :D=200:R1=360:R2=360:R3=360:M
   X=0:MY=250:MZ=0
IT 1260 FOR CNTR=675 TO 678:POKE CNTR,0:N
   EXT CNTR:RETURN
IV 1270 REM
IY 1280 REM
RL 1290 TRAP 1380
KP 1300 ? "Datafile to save [Dn:Filename.
   Ext]":? ": ";:INPUT FILE$:IF LEN(FILE$
   )<1 THEN 1352
UO 1305 CLOSE #1:OPEN #1,8,0,FILE$
SH 1310 ? #1,CPTS:? #1,SIDES:? #1,MX:? #1
   ,MY:? #1,MZ:? #1,D:? #1,R1:? #1,R2:? #
   1,R3
RU 1320 FOR CNTR=1 TO SIDES:FOR COUNTER=1
    TO CPTS:VALUE=WIREX(COUNTER,CNTR):VAL
   UE2=WIREY(COUNTER,CNTR)
UQ 1330 ? #1,VALUE:? #1,VALUE2:NEXT COUNT
   ER:NEXT CNTR
ZJ 1340 FOR CNTR=1 TO CPTS:VALUE=WIREZ(CN
   TR):VALUE2=DIA(CNTR)
CG 1350 PRINT #1,VALUE:PRINT #1,VALUE2:NE
   XT CNTR:CLOSE #1
FY 1352 ? "Picture to save [Dn:Filename.E
   xt]":? ": ";:INPUT FILE$:IF LEN(FILE$)
   <1 THEN 1369
KK 1353 CLOSE #1:OPEN #1,8,0,FILE$:POKE 8
   50,11:POKE 852,PEEK(88):POKE 853,PEEK(
   89)
FQ 1354 POKE 856,0:POKE 857,30:CNTR=USR(A
   DR("hhh⊠LV⊡"),16)
YP 1360 PUT #1,PEEK(712):FOR CNTR=708 TO
   710:PUT #1,PEEK(CNTR):NEXT CNTR:CLOSE
   #1
QT 1369 GOTO 410
IX 1370 REM
LZ 1380 ? "Problem Saving file...Try Agai
   n.":FOR DELAY=1 TO 200:NEXT DELAY:GOTO
    410
TJ 1390 REM PRINT ROUTINES
BE 1400 ? "Print Data or Graph: ";:INPUT
```

```
   OPTION$
QZ 1410 IF OPTION$(1)="D" THEN 1440
AP 1420 IF OPTION$(1)="G" THEN 1680
PB 1430 GOTO 1400
FK 1440 ? "Ready Printer and press [RETUR
   N]";:INPUT OPTION$
RF 1450 CLOSE #1:OPEN #1,8,0,"P:"
AS 1460 ? #1,"# OF CONTROL POINTS:  ";CPT
   S
RF 1470 ? #1,"# OF SIDES:  ";SIDES
GY 1480 ? #1,"MAGNIFICATION:  ";D
TN 1490 ? #1,"MX:  ";MX;"   MY:  ";MY;"
   MZ:  ";MZ
BA 1500 ? #1,"YAW:  ";R1;"   ROLL:  ";R2;
   "   PITCH:  ";R3
BN 1510 ? #1,"SIDE","CONTROL POINT","X","
   Y","Z","RADIUS"
IX 1520 FOR CNTR=1 TO SIDES:FOR COUNTER=1
    TO CPTS
WE 1530 ? #1,CNTR,COUNTER,,WIREX(COUNTER,
   CNTR),WIREY(COUNTER,CNTR),WIREZ(COUNTE
   R),DIA(COUNTER)
FA 1540 NEXT COUNTER:NEXT CNTR:CLOSE #1:G
   OTO 410
IV 1550 REM
RZ 1560 REM CHANGE VIEW PARAMETERS
NG 1570 GOSUB 1260:? "↖Magnification ➡ ";
   D:? "↑▶";:INPUT D
MV 1580 GOSUB 1260:? "MX ➡ ";MX:? "↑▶";:I
   NPUT MX
UQ 1590 ? "MY ➡ ";MY:? "↑▶";:INPUT MY
WA 1600 ? "MZ ➡ ";MZ:? "↑▶";:INPUT MZ
NG 1610 GOSUB 1260:? "Yaw ➡ ";R1:? "↑▶";:
   INPUT R1
KH 1620 GOSUB 1260:? "Roll ➡ ";R2:? "↑▶";
   :INPUT R2
DT 1630 GOSUB 1260:? "Pitch ➡ ";R3:? "↑▶"
   ;:INPUT R3
FH 1640 SR1=SIN(R1):SR2=SIN(R2):SR3=SIN(R
   3):CR1=COS(R1):CR2=COS(R2):CR3=COS(R3)
TM 1650 ? :? :? :? :GOTO 230
JA 1660 REM
QD 1670 REM 1020 PLOTTER ROUTINE
BJ 1680 ? "Ready Plotter and press <RETUR
   N>";:INPUT OPTION$
TD 1690 CLOSE #2:OPEN #2,8,0,"P:"
WI 1700 ? #2,CHR$(27);CHR$(7):REM SET 102
   0 TO GRAPHICS MODE
CC 1710 ? #2,"H"
ZF 1720 ? #2,"C0"
KH 1730 FOR CNTR=1 TO CPTS
IQ 1740 X=WIREX(CNTR,1):Y=WIREY(CNTR,1):Z
   =WIREZ(CNTR):GOSUB 500
ZB 1750 SX=SX*1.5:SY=SY*-1.5:? #2;"M";SX;
   ",";SY
IA 1760 OLDSX=SX:OLDSY=SY
DU 1770 FOR COUNTER=2 TO SIDES:X=WIREX(CN
   TR,COUNTER):Y=WIREY(CNTR,COUNTER):Z=WI
   REZ(CNTR)
JW 1780 GOSUB 500:SX=SX*1.5:SY=SY*1.5
YM 1790 ? #2,"D";SX;",";SY:NEXT COUNTER
JK 1800 ? #2,"D";OLDSX;",";OLDSY:NEXT CNT
   R
EM 1810 REM ADD THE DEPTH LINES
PP 1820 FOR CNTR=1 TO SIDES
HH 1830 X=WIREX(1,CNTR):Y=WIREY(1,CNTR):Z
   =WIREZ(1):GOSUB 500:SX=SX*1.5:SY=SY*1.
   5:? #2,"M";SX;",";SY
MY 1840 FOR COUNTER=2 TO CPTS:X=WIREX(COU
   NTER,CNTR):Y=WIREY(COUNTER,CNTR):Z=WIR
   EZ(COUNTER):GOSUB 500
GZ 1850 SX=SX*1.5:SY=SY*1.5:? #2;"D";SX;"
   ,";SY
GW 1860 NEXT COUNTER:NEXT CNTR:CLOSE #2:G
   OTO 410
```

MASTERING COMPUSERVE'S NEW COMMAND SYSTEM
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setting the message editor you wish to use:

```
Atari 8-bit Forum Options Menu

  Forum Options
1 INITIAL menu/prompt [Forum]
2 Forum MODE [MENU*]
    Messages Options
3 PAUSE after messages [Always]
4 NAME [Mike Schoenbach]
5 Prompt CHARACTER []
6 EDITOR [EDIT*]
7 SECTIONS [..]
8 HIGH msg read [28822]
9 REPLIES info [List]
10 TYPE waiting msgs [OFF]
11 SKIP msgs you left [OFF]

  Enter choice !
```

INITIAL—The Main Functions menu doesn't necessarily have to be the first area of the Forum you enter when logging in. Here is where you can change your entry default menu or Forum area to the Libraries, Conference center or Message area if you want.

Forum MODE—Every Forum has two modes of operation. Menu mode entitles you to full menus. For more experienced users, Command mode gives brief command prompts instead. By typing GO PROFILE you can make a "global" setting for the entire system to default to Menu or Command mode when you join a Forum. An asterisk [*] shows the global setting in your current Forum mode.

PAUSE—You can set how often CompuServe prompts you for a command when reading messages. Settings include Always (read one message at a time, stopping after each one), To You (only stop after messages addressed to you) and Never (scroll mode). When CompuServe pauses after displaying a message, you can reply, reread, or read the replies to the message. If the message is either TO you or FROM you, you can also delete it.

NAME—You can change the name you use in the Forum. Please note that some Forums have this feature disabled, in which case you can ask the sysop to make the change for you.

CHARACTER—You can specify a prompt character. Whenever CompuServe displays a command prompt requesting your input, the character you specify using this option will be appended to the prompt. This is especially useful if you're using a script-driven modem program.

EDITOR—You can choose which editor you prefer to use when leaving messages—the line-numbered LINEDIT, or the non-line numbered EDIT.

SECTIONS—The Sections option lets you select which message sections you want to read. This will help you bypass messages of no interest to you.

HIGH—High Message Read lets you enter a new value for the highest message you've read in the Forum. You

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PRINTPOWER
Hi-Tech Creations, Inc.
1700 N.W. 65th Avenue, Suite 9
Plantation, FL 33313
(305) 584-6386.
$14.95, 48K disk

Reviewed by Jim Pierson-Perry

The second generation of home printing software is here. PrintPower lets you create the same types of artwork as Broderbund's Print Shop, but offers many more options for layout and style.

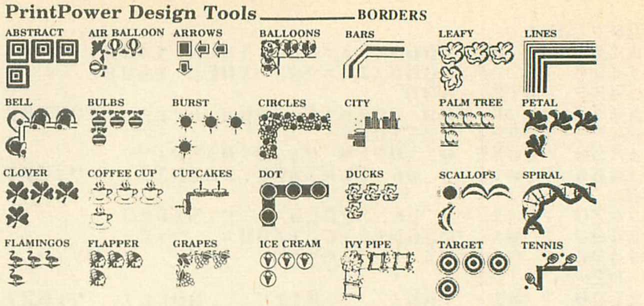
This unprotected two-disk program requires minimum 48K memory, an Atari 1050 disk drive or a compatible drive that can use enhanced density disks (as many as eight drives are supported). The software includes 22 printer drivers for standard dot-matrix graphics printers which will require an interface such as the ICD P:R: Connection.

You can create cards, signs, stationery and banners. All except banners can be printed using either horizontal or vertical orientation. Tent cards are a new layout, made by folding a piece of paper vertically in half and standing it on the edges. Signs and stationery can be printed in full-page or half-page sizes. Banners can have multiple text lines, each with a different font size, and occupy as many as 42 pages.

All artwork can include a border and one graphic design per layout page. This means you can have graphics and text on all faces of a card. The graphic can be copied and pasted at will over the layout page using the arrow keys for freehand positioning. Five graphic sizes can be used, ranging from one inch to full page. Borders, if included, can be one inch or a half inch wide.

All text, regardless of artwork type, is entered via a common editor. Seven fonts are included, ranging from old English to modern. Three different fonts can be mixed on a layout page. Banners can use 11 text sizes while all other artwork uses only three. Text can be justified left or right, or centered. Special text effects include bold, italics, outline, shadow, 3-D and shadow italics. A masking option selects whether the text will overwrite or be hidden by background graphics.

PrintPower Design Tools



Progress throughout the design process is shown by a template on the upper half of the screen display. Blocks and lines are used to show layout, rather than the actual text and graphics, which saves on time and memory consumption. The screen displays are primitive but functional. While printing, a lot of garbage appears on the screen: ignore it. The printout is just fine and the screen eventually comes back to normal.

Despite the new artwork features, success of this program will depend partly on increasing the number of available graphics. The program comes with a starter library of 60 graphics and 20 borders. Additional graphics disks in Hi-Tech's AwardWare series can be directly converted for use with PrintPower. Further graphics, font and border disks are also planned. I would like to see a graphic editor available for users to make their own pictures. This is the only significant feature of Print Shop not met or equalled by PrintPower.

Those who have frustrated by the limitations of earlier home printing programs ought to take a look at PrintPower. I am impressed by its features and performance, especially considering its low $14.95 price. I give PrintPower a "best buy" recommendation. ■

STOP THE PRESSES: NEWSROOM ARRIVES FOR 8-BIT ATARI
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When editing text, you can delete, copy, or move a text block, delete characters, or delete all. Panels can be saved to disk and recalled for later editing.

Banners are put together similarly to a single panel. Art can be added from clip art and/or the graphics toolbox. Once a banner is made, it can be saved and used repeatedly with any small editing changes that are needed (such as the date).

PRESSING ENGAGEMENT

After all the individual panels are done, the final page format is set in Layout. You specify either standard or legal page size, format with or without banner, select panels and their positions on the paper. This is saved to disk as a separate page layout file and then you're ready to roll.

Printing is done in the Press Department. On your first visit, you must select the appropriate printer driver. Several test routines can be used to make sure your printer responds properly to the program. When the configuration is set, select Print Page to get your printout.

A typical page takes seven or eight minutes to print. Only one page can be printed at a time. I'd have preferred to be able to make multiple copies. You can also print individual banners, panels or photos rather than an entire page.

Newsroom is a welcome addition to the ranks of useful, high-quality Atari 8-bit software. It was well worth the effort needed to get it for our computers. ■

NEWSROOM, $49.95
CLIP ART VOLS. 1-3, $29.95 each
($69.80 for all above, direct from mfr.)
Springboard Software, Inc.
7808 Creekridge Circle
Minneapolis, MN 55435
(612) 944-3912
Visa/MC Orders: (800) 654-6301, ext. 3011

MASTERING COMPUSERVE'S NEW COMMAND SYSTEM
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can enter the new value, L for last, or press the [RETURN] key for no change.

REPLIES—Before reading the replies to a message, you can choose to see the message numbers of all replies with the LIST selection, a specified number with the COUNT selection, or no replies at all with the NONE selection.

TYPE—With this option ON, all of your waiting messages are shown in full text when you enter the forum. With it OFF, only the heading of waiting messages is displayed. The REA WAI (READ WAITING) command at the Main Functions menu lets you retrieve the full text of waiting messages.

SKIP—This option lets you avoid reading messages that you posted yourself.

OLD FORUM SOFTWARE

CompuServe will offer the old Forum software for one year after the release of the new version. They encourage you to learn the new menu and command system at your own convenience *offline* by reading the information they'll send you in the mail. To continue using the old Forum software, type in your User I.D. as follows when logging on:

User I.D.: 76703,4363;OLDF

CompuServe will support as many of the old Forum commands as possible to help you during your transition.

The following commands will *not* be supported by the new software:

Functions Menu—B, R, RTONLY, S, STONLY, STDISONL, STONLDIS, QSALL, QSONLY

Read Actions Prompt: UA, SM, C

Post Menu: C, P, L, R, I, D, RA

For more information about the new Forum software, call CompuServe Customer Service at (800) 848-8990 or send an online FEEDBACK (type GO FEEDBACK at any system prompt). Connect time spent in the FEEDBACK area is free of charge. And, of course, always feel free to leave a message addressed to a sysop in your favorite CompuServe Forum with any questions you have about the new software. ■

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*Mike Schoenbach is one of the sysops on CompuServe's SIG*Atari.*

NEW: BBS COVERAGE COMING TO ANTIC

In response to many requests from readers, **Antic** plans to start publishing detailed descriptions of outstanding Atari bulletin boards this autumn. Do you know about or operate a strong Atari-oriented BBS that bars software piracy? Write **Antic** a brief letter about it, or upload a message on ANTIC ONLINE.

TOP BANNER!
continued from page 21

ditional 12-byte header at the beginning containing, among other things, the index line settings for the editor.

The largest that a Print Shop font character can be is 48 columns by 38 rows (228 bytes). So 58 characters at 228 bytes apiece comes out to 13,224 bytes. Unfortunately, there's not enough free RAM, and font length is limited to only 11K. Luckily, even the largest existing fonts occupy only a few kilobytes. Therefore you should be able to use the Print Shop Editor to create two fonts and link them into one long file. One font will have upper case and the other adds lower case and graphics. Print Shop can't recognize the extra material, but Top Banner can.

Atari 8×8 fonts are only 1K each and are compatible with the standard Atari character set. They can be created with editor programs such as UltraFont (**Antic**, August 1986). These fonts need a .FNT extender to be accepted by Top Banner.

ADVANCED TECHNIQUES

When you use "Change Overall Parameters," only enough members of the storage array are changed to accomodate the length of the message. If you re-edit and lengthen the message, you must re-do the Change routine.

Be careful when using Respective Foreground and Background with characters other than standard ASCII. While your computer understands ATASCII, your printer doesn't—a CHR$(12) would not be a small square but a multipage form feed.

While 8×8 fonts are fixed in size, Print Shop fonts vary from font to font—and between characters within a font. When printing Print Shop fonts, the height (or width in verical mode) will be scaled down to fit the page according to the largest character in the set. Otherwise a size 10 Balloon character would be about three pages wide.

Top Banner runs much faster than Print Shop, even when using the same fonts. That's because Top Banner has a different approach to printing. Print Shop first maps each letter into RAM, then converts it to graphics data to send to the printer. But Top Banner simply prints dots as solid rectangular *text*, instead of solid rectangular *graphics* like Print Shop.

A whole line of text occupies only 80 bytes (at 10 characters per inch), but a whole line of graphics could consume up to 2,000 bytes. Furthermore, printing graphics is *much* slower than printing text. So Top Banner represents each pixel in a column by either "blank" strings or as "pixel" strings which are then linked to form a print line. Banner height is altered by changing the length of these two strings, while width is controlled by how many times you print the line.

The slowest part is the logic required to print the letters sideways, so to speed things up these subroutines are located between at lines 100-400. ■

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EASY 3-D WIRE FRAMES
continued from page 23

tering a new value or accepting the default, the program goes to the drawing screen. The drawing area is a Graphics 8 box above a text window.

You'll see a vertical line down the center of the drawing area. That line is what your profile will be spun around to create the wire frame.

The cursor does not destroy a line by going over it. In the text window along the bottom of the screen is a status line displaying the control point you are working on and your current X and Y values.

The drawing screen uses standard Cartesian coordinates, which are much better suited to 3-D graphics than the Atari's coordinate system. (See *Figure 1.*)

To select a control point location, use the joystick to move your cursor to the chosen position and press the joystick button. When designing the profile, it may help you to think of the Y value as the *depth* of the object you are creating and the X value as the *radius*.

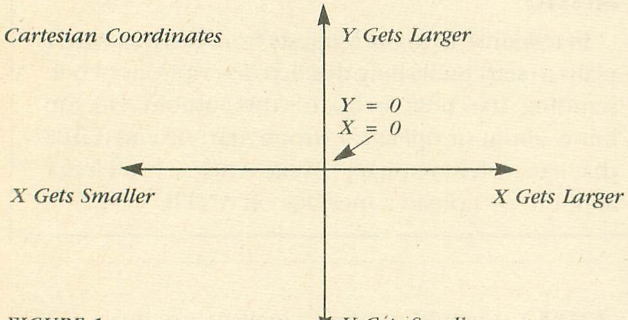


FIGURE 1

After you have selected all your control points, the program starts calculating the wire frame data. This may take awhile, depending on the number of control points and sides you selected. For a graph with 10 control points and 10 sides, the program must calculate 100 data points, using several loops and a lot of SIN( ) and COS( ).

After the data has been calculated, the program will draw the image on the screen. At this point two things can happen: 1. Drawing the object will be completed and you'll have your first Easy 3-D Wire Frames graphic. 2. You will see the message "Fitting To Screen." This means the object you created is too big to be displayed completely onscreen, so the program is scaling it down for you.

After displaying the graph, another prompt appears in the text window: View, New, Print, Save, Quit. Type the first letter of the function you want and press [RETURN].

View: This option lets you edit the values that you entered earlier—Magnification, MX, MY, MZ, Yaw, Roll and Pitch. Like the main menu, it tells you what the current value is. Press [RETURN] to keep this value, or type in a new one.

New: This re-starts the program.

Print: This option presents you with yet another menu. You can select "Data," which prints a table of all the values used to create the wire-frame. If you have an Atari 1020 Plotter attached, you can select "Graph." This gives you a very nice printout of the wire frame drawing. I purposely made the Graph routine the last section in the program, so that those without a 1020 Plotter can substitute their favorite printing graph routine here.

Save: This stores your wire frame on disk. You can save it as a data file, a Micro-Painter compatible picture file, or both. If you want to be able to reload your wire frame, be sure to save it as a data file.

When you choose the Save function, you'll first be prompted for a filename for the data file. Remember to include the drive number as part of the filename (example, D1:SPHERE.3D). If you don't want to save the wire frame as a data file, just press [RETURN].

Next you'll be prompted for a filename for the picture file. Type a filename, as before. Again, if you don't want to save the wire frame as a picture file, just press [RETURN].

Easy 3-D Wire Frames saves images as 62-sector Micro-Painter files. These *can't* be reloaded into Easy 3-D Wire Frames, but may be used with many painting and animation programs. *Rapid Graphics Converter* (**Antic**, November 1985) enables you to use these pictures with even more kinds of graphics software.

Quit: Quits. ■

Robert Geddings of Eugene, Oregon published PolyMove *in the August 1987* ***Antic.***

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CLASSIC CARTRIDGES REVISITED
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and its rider get zapped. The bird becomes so upset that she lays an egg, which yields more points if you retrieve it promptly. If you wait too long, another jouster is hatched, making life more difficult.

This game replicates the look, sound and feel of the arcade original. If you fly too close to the lava pits, a mysterious hand will grab at you. At various difficulty levels the rock formations upon which you can land vary. As the game progresses through survival (complete a round without dying) and "pterry" waves, your opponents become faster and smarter, too.

An additional life is awarded every 20,000 points. All the opposing birds, seemingly dozens at once, move fluidly. The animation is superb, with only an occasional "flicker" when the screen is particularly full. With two players jousting simultaneously, you will find this a great game to play with a friend (or against, since you can joust each other as well).

CENTIPEDE ★★½

Your mushroom garden has been invaded by centipedes which weave their way through the mushroom patch hoping to eat you for lunch. To complicate matters, dancing spiders are interested in ruining your day as well. Top that off with annoying little kamikaze creatures trying to squash you while you're planting more mushrooms to provide additional "cover" from the centipedes, and you're

going to have one tough day. As **Centipede** ($16.95) progresses you have more centipedes to zap, intruding scorpions, and other zany critters out to ruin your garden. This is a successful coin-op conversion. I was never too keen on the original, but if you were then I can recommend this one.

MILLIPEDE ★★★½

Millipede ($19.95), the sequel to Centipede, was much more popular in the arcades because of its improved sound effects and playability. Besides shooting the millipedes and jumping spiders, you must deal with swarms of interesting bees, dragonflies and mosquitos. Since you've learned from past gardening experiences, you now have DDT bombs in your garden. Whenever a millipede or some other dasterdly insect gets too close, shoot the DDT bomb and take it out. New creepy crawlers include inchworms, beetles and earwigs. It takes a real green thumb, with lightening reflexes on the fire button, for this garden to survive.

Next month we'll take a look at a few more Atari cartridge classics. As these oldies-but-goodies are rereleased by Atari, we'll keep you informed. ■

$6.95 to $19.95. Atari Corp., 1196 Borregas Avenue, Sunnyvale, CA 94086. (408) 745-2000.

TEXT SCREEN CODEMAKER

Converts word displays into program lines

Text Screen Codemaker is a quick, easy tool for adding screens of text to your programs, especially help screens for applications with lots of commands. This BASIC program works with 8-bit Atari computers of any memory size, disk or cassette.

BY JOHN BERNDT

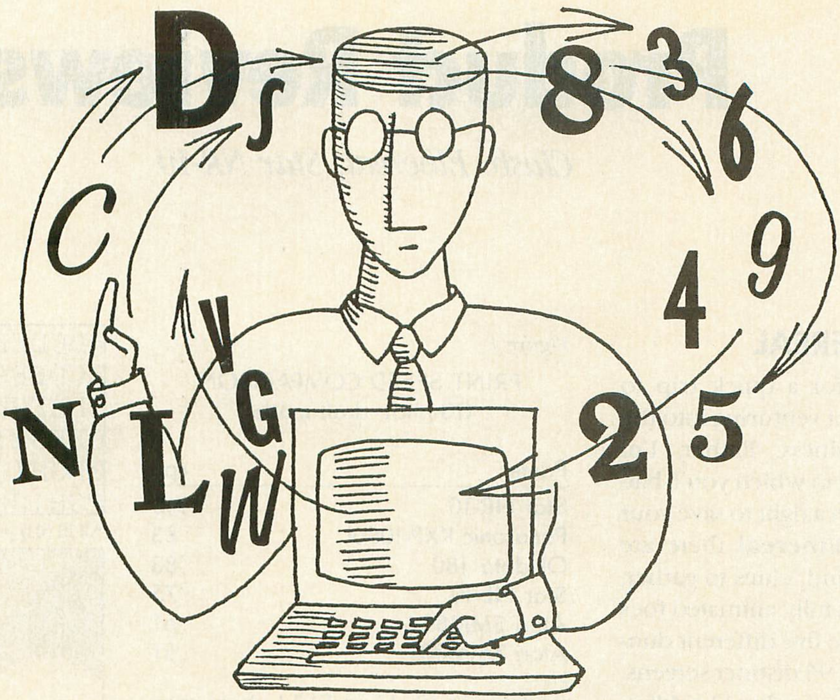
•

Type-In Software

TEXT SCREEN CODEMAKER is a useful utility that converts onscreen text into actual source code that can be included in your BASIC programs. Using the Text Screen Codemaker is so simple that I find myself writing every menu, introduction screen and prompt with it.

Type in Listing 1, CODEMAKE.BAS, check it with TYPO II and SAVE a copy before you RUN it. The pause when you RUN the program is due to the Player/Missile cursor being initialized.

John Berndt is a high school student from Rochester, New York. He has been an Atari programmer since 1983 and participates in his local users group, ACORN.



The opening prompt asks for the first line of your program. The Screen Formatter begins with line 20000, so any number below that is fine. Then you're asked for the line increment—any increment works unless it will eventually interfere with the Text Screen Codemaker.

At the Left Margin prompt, enter the column number where you want printing to begin on your screen. The default is 2, because many television screens cut off the first couple of columns. Now press [START] to begin creating your screens.

The [CLEAR], [INSERT], [DELETE], [ARROW] keys, etc., function as normally. For large jumps across the screen, use the [ARROW] keys because this eliminates most of the problems caused by the computer keeping track of all the logical lines. *Don't* press [RETURN] until you are done!

Also, *don't* type on the last line at the bottom of the screen—or on the last space in the second to last line. This will make the screen scroll upward and eliminate the top line. Press [RETURN] and let the Codemaker do its stuff only *after* you're satisfied that everything is the way you want it.

During the first pass of the cursor, ATASCII character 253 (the crooked left arrow made by pressing [ESCAPE] and then [CONTROL] [2]) is added to mark the end of each line for later use. All the onscreen characters are stored in memory during the cursor's next pass.

Next, the computer counts the spaces before each line begins. The source lines are then written and stored in memory. After everything is finished, the new lines are displayed, and you are asked if you want to SAVE them. If so, enter a filename at the next prompt. You can LIST the lines to any device, including a cassette (by entering C:) or printer (by entering P:). To SAVE them to disk, enter D: and a filename.

TECHNICAL NOTES

I discovered that Text Screen Codemaker needed a special cursor because the normal cursor left a trace character onscreen that was picked up in the final source code. Jerry White's P/M Cursor routine (**Antic**, November 1984) provided a fine solution. I stripped White's previously full-featured program into the bare DATA stamps and an initialization routine for the machine language (lines 20025-20035).

Lines 20255-20320 are the logic of the Codemaker program. They check to see whether there are more than six spaces before the actual line begins, in which case a POSITION statement would be more practical. Another case where a POSITION statement would be added is if one or more lines are skipped between two lines. Line 20170 prevents the skipped line that would be caused by placing the character 253 in the last column.

I used several programming tricks in Text Screen Codemaker. The POKE 84,4 replaces a standard POSITION statement by POKEing a number into the computer's memory location for the current row, thereby skipping the appropriate number of lines.

POKE 842,13 activates the Atari's Forced Read mode, which makes the computer "press" [RETURN] automatically. This can be handy by previously positioning the cursor above a line you wish to enter into memory and then doing the POKE. POKE 842,12 turns this feature off.

I created an all-purpose error-handling routine (lines 20425-20435) to replace dozens of TRAP statements. Location 195 holds the most recent error number. The subroutine always has to be re-initialized when it is used. Line 20435 returns the program to the line before the error.■

Listing on page 31

Product Reviews

Clash: Ethereal, Star NR-10

CLASH: ETHEREAL

In the mood for a quick trip to Hades? No, I'm not venturing into the travel agent business. Rather, I'm describing a game in which you'll battle Satan himself in a fight to save your soul. In **Clash: Ethereal** there are magic stones to find, clues to gather, traps to avoid and fully animated foes to battle. There are five different dungeons, making up 95 distinct screens. But to win, you must solve 13 riddles.

You won't solve them all in one sitting, but it is possible to save the game at any of several points. The graphics are adequate, but not prize-winning. Movement can be accomplished via the keyboard (with or without a joystick). Overall, the challenge should keep you entertained for quite a while, and the quality of the system is high enough to make Clash: Ethereal worth the cost.—RICK TEVERBAUGH

$17.95, 48K disk. Imagists Group, 9721 Ashbourn Drive, Burke, VA 22015. (703) 764-0835.

CIRCLE **258** ON READER SERVICE CARD

STAR NR-10

Reviewed by Gregg Pearlman

The fast, feature-laden **Star NR-10** can be considered the top-of-the-line Star Micronics 9-pin dot-matrix printer. Look at the speed comparison chart (*Figure 1*) and you'll see that the NR-10 left **Antic**'s other dot-matrix printers in the dust. The NR-10 printed a document of exactly 20,000 characters at 148 characters per second (cps) in 10-pitch and 40 cps in near letter quality (NLQ).

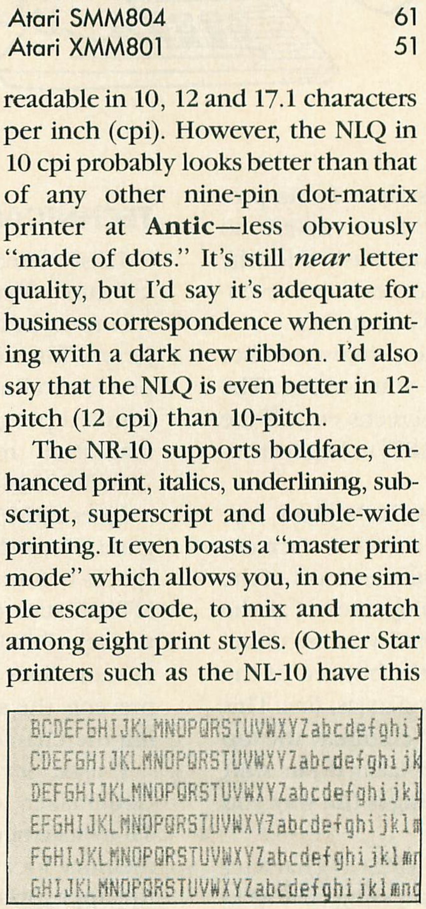
Draft quality text on the NR-10 looks about the same as on Star NL and NX series printers—clear and readable in 10, 12 and 17.1 characters per inch (cpi). However, the NLQ in 10 cpi probably looks better than that of any other nine-pin dot-matrix printer at **Antic**—less obviously "made of dots." It's still *near* letter quality, but I'd say it's adequate for business correspondence when printing with a dark new ribbon. I'd also say that the NLQ is even better in 12-pitch (12 cpi) than 10-pitch.

Figure 1

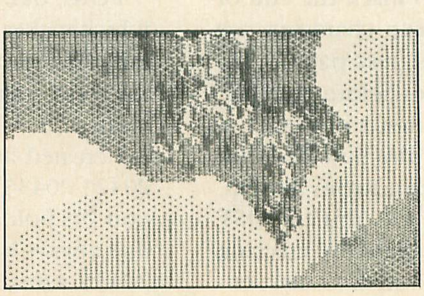
PRINT SPEED COMPARISON
(10-pitch, draft mode)

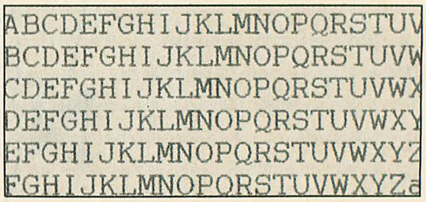
Printer	cps
Star NR-10	148
Panasonic KXP-1080i	83
Okidata 180	83
Star NL-10	75
Atari SMM804	61
Atari XMM801	51

The NR-10 supports boldface, enhanced print, italics, underlining, subscript, superscript and double-wide printing. It even boasts a "master print mode" which allows you, in one simple escape code, to mix and match among eight print styles. (Other Star printers such as the NL-10 have this feature too.) Special features include 11 types of international characters, double-sized and quad-sized printing and macro definition.

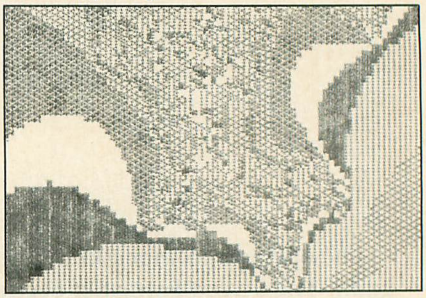


NR-10 draft printing.


DEGAS graphic on NR-10



NR-10 NLQ printing.


DEGAS default palette printout.

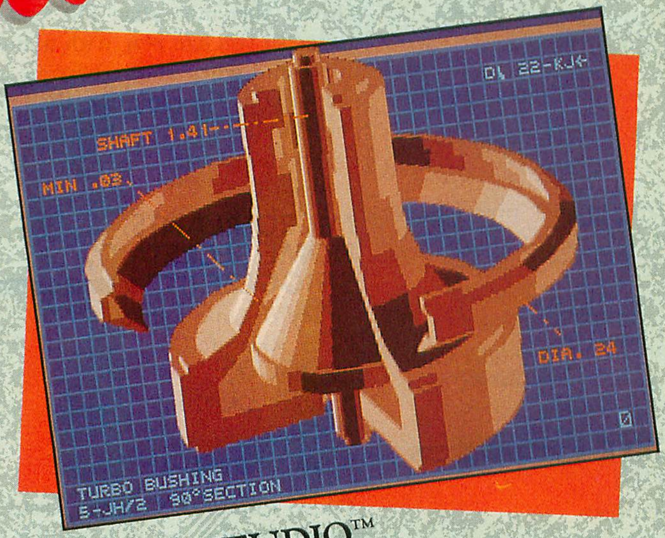
There's also a proportional 10-pitch setting. (Divide cpl by 8 to get cpi.) The NR-10 panel buttons feature draft and NLQ settings for 80, 96 and 137 characters per line (cpl) although you can't get 137 cpl NLQ. The master print mode somewhat frees you of these boundaries, however. You can combine proportional print with all three print pitches through BASIC or a word processing program that allows user-defined printer codes such as First XLEnt Word Processor or, to a lesser extent, PaperClip. Depending on what settings you might choose in the master print mode, your text could be between 5 and 20 cpi.

The NR-10 yields nice, dark text, but graphics printouts aren't particularly sharp, dark or clear, even with a new ribbon. The NR-10's graphics printouts, while fast, aren't as good as those on the less expensive Panasonic KXP-1080i and Okidata 180 (reviewed in **Antic**, April 1988).

When hooked up to an ST, [ALT]

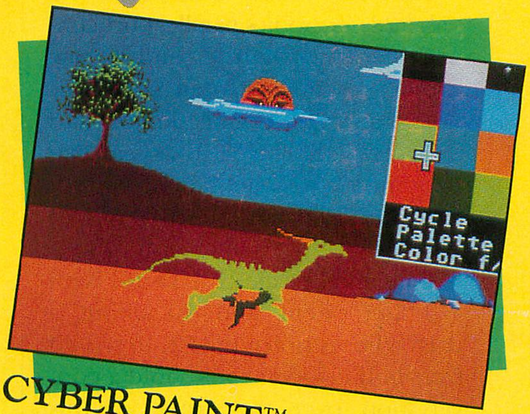
continued on page 46

The Catalog Gives Good Software

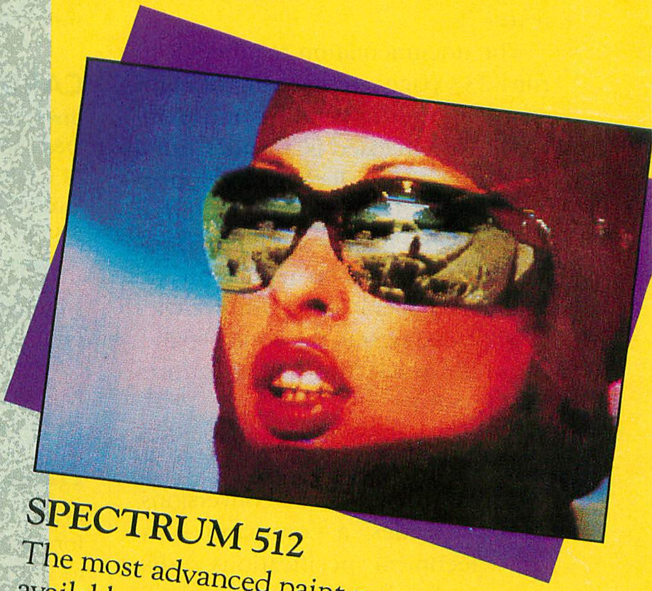


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Featuring CAD-3D 2.0., the foundation of the Cyber system—create 3D solid models then animate them! REQUIRES: one-megabyte RAM and color monitor
STO236 $89.95

CYBER CONTROL™
Powerful, BASIC-like language controls CAD-3D 2.0 to create fantastic 3D animations! REQUIRES: CYBER STUDIO
STO250 $59.95



CYBER PAINT™
The most powerful animation system on the ST: cellular, dimensional, ADO, compositing—it's all here! REQUIRES: Color system, one-megabyte RAM
STO251 $69.95



SPECTRUM 512
The most advanced paint program available. An amazing 512 colors anywhere on screen at once! REQUIRES: Color system
STO249 $69.95

"Antic's Cyber family...turns the Mega ST into a desktop video animation workstation... little short of amazing."
—Jerry Pournelle,
Byte Magazine

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[HELP] screen dumps including the ST desktop and game screens took around 85 seconds to print. Screen dumps printed from within DEGAS Elite took between 81 seconds and 106 seconds, depending on how much white space the picture had.

The NR-10 is easy to hook up. The standard Centronics parallel port connects directly to an ST, and is easy enough to connect to an 8-bit Atari via the ICD P:R: Connection or Atari 850 interface. The NR-10 is reasonably quiet, yields goodlooking draft and near letter quality (NLQ) printouts.

On a noise scale of 1 to 10, with 1 being silent and 10 being a daisywheel printer, the NR-10 would rate about 4—you could hold a conversation over the drone of this printer with reasonable comfort. It's a bit quieter than our Star NL-10 (**Antic**, January 1988), considerably quieter than the Panasonic KXP-1080i, and somewhat louder than the Okidata 180, at least when printing text.

The documentation for the NR-10 runs 233 pages—consisting of eight chapters, seven appendices and an index. Also enclosed is a leaflet titled "Utilizing Star's Technical Support Services," a "Users' Guide" card that discusses the panel switch combinations, self-tests, ribbon installation and automatic paper loading, and a sticker to be placed next to the control panel as a guide to selecting special features on the NR-10.

The appendices occupy about 40% of the manual and cover DIP switch settings, ASCII codes and conversions, function codes, a command summary, technical specifications, a discussion of the parallel interface, and serial interface specifications.

If you can get the Star NR-10 for $300, snap it up. If you can get it at $400, you're still in good shape. And even at its top-of-the-line $579 suggested retail price, the NR-10 still merits serious consideration if speed and outstanding NLQ text are sufficiently important to you. ■

$579. Star Micronics, Inc., 3 Oldfield, Irvine, CA 92718. (800) 537-8270.
CIRCLE **262** ON READER SERVICE CARD

New Products

*New Products notices are compiled by the **Antic** staff from information provided by the products' manufacturers. Antic welcomes such submissions, but assumes no responsibility for the accuracy of these notices or the performance of the products listed.*

ST JR

(operating system)
Merrill Ward & Associates
255 N. El Cielo Road, # 222
Palm Springs, CA 92262
(619) 328-8728
$59, 64K disk
CIRCLE **263** ON READER SERVICE CARD

ST jr (GOE) is a cartridge that lets you use an ST mouse in joystick port 1 to perform a variety of DOS functions from the 8-bit desktop. The operating system package includes a mouse-operated paint program and a word processor complete with five different font selections. Demo disks are $5.

CARD TRACKER

(inventory software)
D&F Sports Enterprises
713 Wicker Avenue
Streamwood, IL 60107
$19.95, 48K disk
CIRCLE **265** ON READER SERVICE CARD

How do you figure? Willie Mays hit his 600th career homer in 1969. His 1970 baseball card costs about $25 today. Reggie Jackson hit 47 home runs that year—fading badly in the second half—yet his 1970 card costs about $35. This is the kind of information available in **Card Tracker**, a database for baseball card enthusiasts who want to keep their inventory updated. One-touch commands let you move about a given file, update and print the card set. A Card Information List can be printed by card number, player name or team.

Card Tracker comes with current Topps, Donruss, Fleer and Sportsflics baseball databases. Available databases date back to 1948. Football, basketball and hockey databases will be available soon. Additional data disks cost $4.95 each, and the $6.95 you pay for a demo version of Card Tracker applies toward purchase of the actual product.

CHEAT!

(game utility)
Alpha Systems
1012 Skyland Drive
Macedonia, OH 44056
(216) 467-5665
$24.95, 48K disk
CIRCLE **264** ON READER SERVICE CARD

Play Zork or The Pawn with an unlimited number of lives. See what happens when you win. It's easy—just **Cheat!** Alter more than 100 Atari 8-bit games so you can play with unlimited lives—and when you've become an expert at your favorite game, the Uncheat! utility converts the game back to its original state.

MICRO PLANTS, HOME SECRETARY, SNIGGLEFRITZ

(utility & game software)
Ramx Software Co.
P.O. Box 453
Ramona, CA 92065
48K disk
CIRCLE **266** ON READER SERVICE CARD

Micro Plants ($15 for two disks) helps you take care of your fine indoor and outdoor garden plants, telling you all you need to know for keeping them healthy. **Home Secretary** ($20) takes care of all your home printing needs—index cards, envelopes, etc. And **Snigglefritz** ($15) is a two-player, joystick-driven math learning game.

BASEBALL HANDICAPPER

(gaming software)
Software Exchange
P.O. Box 5382
West Bloomfield, MI 48033
(800) 527-9467—National
(313) 626-7208—Michigan
$49.95, 16K disk
CIRCLE **180** ON READER SERVICE CARD

Use your Atari to handicap professional baseball games using information found in your newspaper's sports section. It takes only five minutes to enter the data necessary to perform the statistical analysis that predicts the winner, spread and total runs in the game.

continued on page 57

ST Resource

All the latest news for the ST user — July 1988

MAGIC SAC PROFESSIONAL

ST's MacEmulator is better than ever

Reviewed by Jim Pierson-Perry



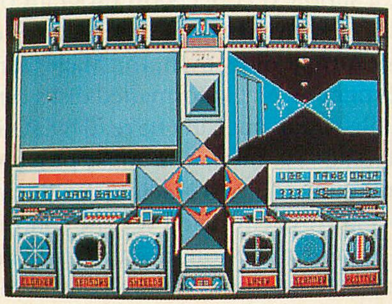
Mary Rhomberg Peloquin

IT BEGAN INNOCENTLY ENOUGH. Dave Small and co-conspirators reasoned that since the Apple Macintosh and ST computers are based on the same microprocessor, transplanting the Mac boot ROM chips, with supporting software, into the ST should let it run Mac software. From that central idea—and months of frenzied programming—came the Magic Sac.

Even before going on sale, the Magic Sac had become legendary in the Atari community. The idea of running Macintosh software on an ST brought cries of heresy from Apple users—and smug grins from Atari users. The current version, **Magic Sac Plus**, includes a clock/calendar chip and improved software. *continued on page 50*

ST Games Gallery

Slaygon, Oids, Hunt For Red October, Police Quest, Space Quest II, Arctic Fox



SLAYGON

Time is running out and the United Defense Force needs your help. Seems like the Cybordynamics Laboratory created a virus that can destroy all human life. You'll control the **Slaygon**, a military robot with the strength of a hundred men and the armor and weapons of a high-tech battle tank. Maneuver the Slaygon through a five-level, 500-room complex and destroy the main computer. Simple!

Below your front view screen, which displays what the Slaygon sees, are the Slaygon's weapons. The cloaking device renders the Slaygon invisible to security robots. The battle sensor displays the amount of energy an enemy is currently storing—if it's too high, turn tail and run. The field generator and laser amplifier let you use conventional weapons that you find. The long-range scanner displays objects within scanner range. And the last device shows the energy level of an installed shield or laser you've taken.

Objects you find can be taken, used and dropped. Taking an object saps energy from the Slaygon—when the Slaygon runs out of juice, it's *adios amigos*. And only some of the objects you find are useful.

As you move, the front view screen displays a page-flipped 3-D environment (I'd prefer real-time 3-D) consisting of hallways and doors which start to look alike after a while. There are five levels, and finding a security pass gives you access to the next level. Some doors are locked, and some are guarded by a security robot.

There are traps that can prove fatal. At one point you'll face several obstacles that you *must* overcome. The best strategy is to use the correct weapon or object for each challenge—wasting energy is the worst thing you can do.

The small manual explains the functions of the Slaygon very well. There is a section with hints and tips for those hair-pulling situations. Despite a few minor drawbacks, Slaygon is fun.—SCOTT TUMLIN

$39.95, color. Microdeal (MichTron), 576 S. Telegraph, Pontiac, MI 48053. (313) 334-5700.

OIDS

Oids combines the daring rescues of Choplifter, the frantic action of Defender and the precision flying of Lunar Lander for a fantastic arcade shoot-em-up. The cruel, powerful Biocretes have created robot slaves called Oids. In your V-wing fighter you must penetrate the Biocrete defenses, land, pick up eight Oids and return to your mother ship.

You begin with four V-wing fighters, and when you return to the mother ship you get a bonus fighter. When you lose all your fighters, you can continue playing in practice mode. Your weapons include nuclear pellet guns, fired singly or in rapid-fire bursts, and four Nova Bombs, which destroy anything within range. You also have a shield to protect you against Biocrete weapons.

The Biocretes defend their bases with photon guns, missile launchers, Repulsers, Gravbases, a formidable Home Base and shields. There is also a Biocrete mother ship, protected by a shield. You release the Oids by hitting Biocrete jails with a single pellet, but when you land, you must be careful not to burn any Oids with your exhaust or shield.

The top of the screen displays your score, fuel reserves, shield status, fighters remaining, number of Oids aboard your fighter and the number of Nova Bombs remaining. When you complete a mission, your mother ship takes takes the Oids to the Oidromida and you receive bonus points. High scores are saved to disk.

Oids' Game Editor is a Lunar Lander construction set that lets you create your own games or edit those already on the game disk. From the Game Library menu you can save or load games to the master game disk or a library disk. Oids is skillfully crafted and detailed. It deserves to be on the wanted list of any arcade game fan.—JOHN MANOR

$34.95, color. FTL Games, 6160 Lusk Blvd., Suite C206, San Diego, CA 92121. (619) 453-5711.

HUNT FOR RED OCTOBER

The Hunt for Red October, based on the best-selling novel by Tom Clancy, is the first computer submarine game involving nuclear subs and the Cold War milieu. The program parallels the novel, with the twist being that the game is played from the *Soviet* perspective. You, the commander of the Red October, have decided to defect to the United States and surrender your vessel to the U.S. Navy.

To guarantee the cooperation of

continued on page 56

MAGIC SAC PROFESSIONAL
continued from page 47

Now the legend continues with the arrival of **Translator One**, a hardware device that enables your ST disk drive directly read and write Mac disks. There's also the **Magic Printer Driver**, which makes it possible for your Mac software to use an Epson-compatible printer instead of the default Apple ImageWriter printer. All three products can be bought separately, or as a package deal—the **Magic Sac Professional**.

Why would a self-respecting ST owner transform his computer into a Mac? Two good reasons are compatibility and an outstanding software selection. You can get your work done at home by using your ST to mimic the Macs at the office, or share files with Mac-using friends and co-workers.

ST HAT TRICK

For me, the best thing about Magic Sac Professional is that I can use my ST to manage communications between Mac and IBM computers. At work I use a Mac while my secretary and most co-workers use IBM computers. Needless to say, sharing data and writing joint reports was a problem—until now.

Nowadays, I bring my Mac disks home and use my Magic Mac conversion utilities to go from Mac to ST and back. As a bonus, the ST 3.5-inch disk format just happens to be identical to that used by IBM. The data files go back to my co-workers in a form they can use directly, or I can use PC-Ditto and run the necessary IBM software myself—three goals with one shot for the ST!

I get two other benefits from this setup. First, I have modified my ST monochrome monitor to use the full screen size (using simple instructions found on most ST bulletin boards). The ST monitor is much easier on my eyes than the smaller Mac screen, and some Mac programs automatically use the larger window size to display more information. The other advantage is that taking work home lets me leave the office earlier and enjoy more sunny afternoons.

The Magic Sac Professional is an incredible achievement that can benefit anyone who works with a Macintosh system or needs application programs that are unavailable for the ST. In my hands it has performed flawlessly for four months of regular use. Data Pacific has an excellent reputation for prompt customer support and is active on major national online services. Combined with PC-Ditto, Magic Sac gives the ST the equivalent of three computers in one—and the ability to manipulate files among them. That's real magic in my book.

MAGIC SAC PLUS

The heart of the Magic Sac system, the Magic Sac Plus, consists of a plastic cartridge housing and circuit board for the Mac boot ROM chips and onboard clock/calendar chip, a Mac/ST connection cable and ST program disk. Due to an agreement with Apple, Data Pacific cannot sell the cartridge with the ROM chips installed, so you must purchase and install them yourself. However, most Magic Sac Plus dealers carry the ROMs, and the installation requires no soldering. The cartridge serves as a real-time clock and can stay plugged in without affecting normal ST programs.

The Magic Sac Plus alone cannot run Mac software from the original disks, due to differences in encoding protocols between the Mac and ST disk drives. You must transfer Mac software to the ST, either by directly connecting the computers and using a supplied conversion program or by downloading from a BBS. In either case, the Magic Sac Plus uses a special disk format of its own, the Magic format, to store the Mac programs. Magic-formatted disks can be single-sided or double-sided, but can't be read by TOS.

To get your "Magic Mac" running, you must provide a Magic boot disk containing the two Macintosh operating system files—Finder and System. These are the equivalent of TOS for the ST and can be found on many Mac program disks, purchased from Apple vendors or downloaded from a Mac BBS. There have been many versions of these two files—some of which are plagued with bugs. Data Pacific recommends Finder 5.4 and System 3.2.

Magic Sac needs at least a 520ST and a single-sided disk drive. Either a monochrome monitor or a color monitor will work. Hard drives are also supported and you can set up a hard disk partition for Magic format while leaving the others in TOS format.

The last step before actually using the system is to specify configuration parameters for memory size, use of hard drive and printer port. Using a smaller memory size (such as 512K with a 1040ST) automatically sets up a memory cache, improving program speed by cutting down on disk access. These parameters can be saved and invoked automatically in the future.

Limitations of the Magic system are that sound, MIDI and Appletalk local networking are not supported. This is because of major differences between the Mac and ST sound chips, and also because the Mac requires additional hardware for MIDI and Appletalk.

Although laser printers aren't supported directly, you can print a Postscript file to disk and then use a roundabout means of sending it to the printer.

Be Warned: you *must* follow the directions in the manual for removing or changing disks. Otherwise, you could damage files. This is due to the Mac operating system, not the ST.

In addition to the system software, the Magic Sac Plus disk also contains programs to initialize disks in Mac, ST or IBM formats; transfer file formats between Mac/Magic and TOS; format a hard disk partition for Mac/Magic use; and read and write to the real-time clock. The most recent release, version 5.9, includes support for Supra and Atari's new hard drives for the Mega computers.

TRANSLATOR ONE

Clearly, the feature most sought-after by Magic Sac Plus users was ability to read and write to Mac disks on ST

drives— in order to run copy-protected software as well as making it much easier to transfer data between the ST and Mac. The problem was that the basic differences between the encoding schemes of Mac and ST drives could not be solved via software alone.

The answer was to create a new ST disk drive controller capable of dealing directly with Mac formats—the Translator One. It connects to the ST via the MIDI and floppy drive ports. During normal ST use or when using Magic-formatted disks it does nothing. However, it turns on when a Mac-formatted disk is inserted and takes over the drive controller functions. When the Mac disk is ejected, the Translator One goes back to sleep. It fits conveniently atop an Atari external drive and has a simple on/off switch.

The only problem comes up if you need Apple's HFS disk management system, which expedites file-handling with double-sided Mac disks and hard drives. Apple's original file management system (MFS) was fine for single-sided disks and hard drives with under 100 files. The Translator One manual provides an extensive explanation of the extra steps for using HFS. You'll need the Apple file, Hard Disk 20, ver. 1.1 from a BBS or Apple vendor.

Save the above file in the system folder of a Magic start-up disk using Finder 5.4 and System 3.2. Bring up the Magic system as usual. Now you can read double-sided Mac disks with the Translator One. The HFS system is downwardly-compatible with MFS, so all of your old Magic-formatted disks will work. The manual also gives instructions for formatting a hard drive partition to use HFS.

While the Translator One is an outstanding product, it has problems with some copy protection schemes, particularly those based on either illegal calls to special Mac chips which aren't in your ST, or Mac-specific timing cycles (the Magic Sac Plus runs faster than a Mac). Fortunately, these mostly apply just to games. The trend is towards removing copy protection on application programs.

MAGIC EPSON PRINTER DRIVER

The final piece of the package, Epstart (by SoftStyle), allows Mac software to use Epson-compatible printers instead of Apple ImageWriters, long the only dot-matrix available for Mac users. Epstart is now released in Magic disk format through Data Pacific. Simply run the program and it will make the printer resource substitution on your application program disks. The printer driver disk must be used as the initial start-up disk for the Epstart program to run correctly and it won't work with HFS-based Magic disks.

Epson models supported include: FX-80/100, MX-80/100, RX-80/100, LX-80 and LQ-1500 as well as the color JX-80. A desk accessory is also installed which allows for print pitch selection and color (for JX-80). On my Star NX-10, using high density pitch, I found the print quality to be better than an ImageWriter's. Both normal and sideways printing are supported by many Mac programs.

MAC SOFTWARE

Speaking bluntly, there are a number of very good Mac application programs that the ST does not (yet) cover. These typically have more features and are easier to use than their ST counterparts (and are priced accordingly!), primarily because of more field-testing with a larger user base.

The list of Magic-compatible software is growing constantly. A major reason is that software developers are hurriedly revising their programs to become compatible with the new Mac II. This means that many "illegal" hooks into the operating system and hardware are being cleaned up—which in turn improves compatibility with Magic Sac Professional. And Data Pacific has done yeoman service by including error trapping routines to avoid problems with certain Mac programs. The best sources for compatibility questions are the Data Pacific message bases on the GEnie and CompuServe online services, and a monthly Magic column in Current Notes, the professional-quality magazine of the Washington Area Atari Users Groups.

MY FAVORITE MACWARE

Following is a short and highly selective list of my favorite Macintosh software:

Excel (Microsoft Corp.) is simply the best spreadsheet for any microcomputer. It features integrated calculation, graphic and database operations with sophisticated macros, an extremely intuitive user interface; it reads and writes Lotus 1-2-3 files and runs at blinding speed.

Word (ver. 3.01. Microsoft) is the top-of-the-line word processor for combining text, graphics and multiple fonts. It's a model of what could someday be available on the ST.

OverVUE (ProVUE Development Corp.) is a relational database with an outstanding graphical interface. It fills the void for the ST between entry level programs, such as dB Master One, and high-end powerhouses like dBMAN.

Statworks and **Cricket Graph** (Cricket Software) are for dedicated statistical and graphical data analysis. The nearest approximation would be B/Graph (Batteries Included) for Atari 8-bit computers. We've yet to see a similar product for the ST.

Micro-Planner+ (Micro Planning Software, Ltd.) is a graphics-oriented project management tool. It's very easy to use and provides a wide range of planning and resource management functions. Only the **Logistix** spreadsheet (Progressive Peripherals and Software) offers some of these features for the ST. ■

Magic Sac Plus, $149.95
Translator One, $279.95
Magic Epson Printer Driver, $45
Magic Sac Professional, $449.95
Data Pacific, Inc.
609 East Speer Blvd.
Denver, CO 80203
(303) 733-8158

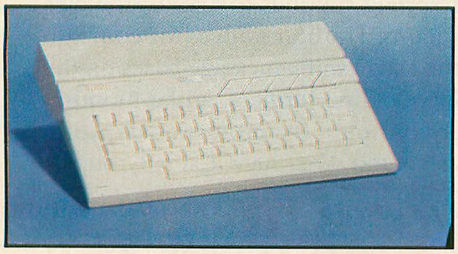
When you want to talk Atari

XL/XE HARDWARE

INTERFACES

ICD
P:R Connection ... 59.99
Printer Connection ... 39.99
Supra
1150 ... 38.99
1151 (1200 XL) ... 41.99
Xetec
Graphix Interface ... 38.99
Atari
850 Interface ... 109.00

COMPUTERS



Atari 130XE $135

Atari
65 XE ... 99.99

XL/XE ENHANCEMENTS

Axlon 32K Mem. Board (400/800) . 19.99
Atari 80 Column Card ... 74.99

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Atari
SX212 300/1200 (ST) ... 89.99
835 ... 19.99
XMM301 ... 42.99
Anchor
VM520 300/1200 ST Dir. Con ... 119.00
Avatex
1200 HC ... 89.99
2400 ... 179.00
Supra
2400 Baud XL, XE ... 169.00
2400 Baud ST ... 169.00
2400 Baud (no software) ... 149.00

MONITORS

Magnavox
CM8502 13" Comp. & cables ... 179.00

ST HARDWARE



520 ST FM RGB/COLOR $789

Includes: 520 ST FM with 3½" drive built-in, mouse, power supply and 1224 color monitor.
1040 RGB/Color System ... 969.00
1040 Monchrome System ... 789.00
1040 Computer (no monitor) ... 649.00
520ST FM Monochrome System (Includes: 520 ST, internal drive, modulator, mouse, Basic and monochrome monitor) ... Call
SM124 Monochrome Monitor ... 169.00
SM1224 Color Monitor ... 329.00

DRIVES

Atari
XF551 Drive (XL/XE) ... 189.00
AA314 DS/DD Disk (ST) ... 209.00
AA354 SS/DD Disk (ST) ... 129.00



Atari SHD204 20 Meg for ST $559

I.B.
5¼ ST Drive ... 209.00
Indus
GTS 100 3½" Drive (ST) ... 189.00
GT Drive (XL/XE) ... 189.00
Supra
20 Meg Hard Drive (XL/XE) ... 649.00
20 Meg Hard Drive (ST) ... 559.00
30 Meg Hard Drive (ST) ... 689.00

PRINTERS

Atari
1020 XL/XE Plotter ... 35.99



Atari XM-M801 XL/XE Dot Matrix $189

XM-M804 ST Dot Matrix ... 184.00
XDM 121 Letter Qlty. XL/XE ... 199.00
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M-1109 100 cps Dot Matrix ... 179.00
M-1409 180 cps Dot Matrix ... 309.00
HR-20 22 cps Daisywheel ... 339.00
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120D 120 cps Dot Matrix ... 149.00
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Premier-35 35 cps Daisywheel . 479.00
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Hi-80 4 pen plotter ... 269.00
FX-86E 240 cps, 80 col. ... Call
FX-286E 240 cps, 132 col. ... Call
LQ-500 180 cps, 24-wire ... Call
LQ-850 330 cps, 80 col. ... Call
EX-800 300 cps, 80 col. ... Call
NEC
P2200 pinwriter 24-wire ... 369.00
P660 pinwriter 24-wire ... 459.00
P760 pinwriter 132 col. ... 649.00
Okidata
Okimate 20 color printer ... 129.00
ML-182 120 cps, 80 column ... 239.00
ML-192+ 200 cps, 80 column ... 359.00
ML-193+ 200 cps, 132 col. ... 459.00
Panasonic
KX-P1080i 144 cps, 80 col. ... 189.00
KX-P1091i 194 cps, 80 col. ... 199.00
Star Micronics
NX-1000 140 cps, 80 column ... 179.00
NX-15 120 cps, 132 column ... 319.00
Toshiba
P321-SL 216 cps, 24-wire ... 499.00

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By GREGG PEARLMAN, *Antic Assistant Editor*

ATTENTION, KUMA SHOPPERS

K-Expert, an intuitive rule-based expert system generator, lets you develop complex fault diagnoses, personnel selection, product purchase decisions and more. An editor is used to create a four-part source file consisting of variables, definitions and forms, definitions of reports, and both "'QUERY" and "'SOLVE" rules. Six types of variables are built in—strings, reals, dates, booleans, options and confidences. And arithmetic operations can be performed on all types.

About $150 in English pounds. Kuma Computers Ltd., 12 Horseshoe Park, Pangbourne, Berkshire RG8 7JW, England. 44-7357-4335.

EA JOINS IN

In **Master Ninja** ($34.95), you guide a ninja assassin through the chambers of an evil warlord's castle to regain a magic sword and dust the warlord. Master Ninja sports over 30 combat screens and 3-D perspective. **Twilight's Ransom** ($34.95) gives you a big Saturday night date, so you think. What you get is a ransacked apartment, a kidnapped girlfriend and an anonymous phone call suggesting you deliver "the goods" if you ever want to see her again. Your mission, which you'd better accept, is to find out what "the goods" are and deliver them pronto.

It's January, 2087. In **Guardians of Infinity** ($39.95), you're given the task of preventing the assassination of President Kennedy. Interestingly, time is on your side for a change—because you're Adam Cooper, inventor of the miraculous time sphere. You travel back to Fort Worth, Texas, on November 15, 1963—and you have a week to complete your task and save eternity.

In **Wizard Wars** ($39.95), you're the champion of the god of passion, who wants you to free the White Unicorn, the astral incarnation of light and order, who has been imprisoned by the evil wizard Aldorin. The White Unicorn must be reunited with the Black Unicorn, the astral embodiment of darkness and chaos, to restore the cosmic balance and ultimately defeat Al.

Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7991.

MAIL-PRO FOR LESS

Now that postal rates in the United States have gone up, it's a lucky thing that Hi-Tech Advisers has slashed the price of its popular database and mail merge file manager, **Mail-Pro**, from $69 to $39. If you own a $69 copy, you can receive a free gift certificate toward future purchase of any Hi-Tech software. And despite the price reduction, Mail-Pro still includes a shareware copy of Inventory-Pro, a simple, efficient inventory manager.

$39. Hi-Tech Advisers, P.O. Box 7524, Winter Haven, FL 33883. (813) 293-3986. Florida: (813) 294-1885.

EASY-TOOLS

If you use Migraph's Easy-Draw for technical, electrical or architectural design, you'll want to have **Easy-Tools** at hand as a desk accessory. Easy-Tools' Angulator lets you measure distances and angles, then save the information for use later on in the Rotator—which simply rotates any object except text and bit-images. The Inquisitor gives you numerical information on selected objects, which you can then edit.

$49.95. Migraph Inc., 720 South 333rd Street, Suite 201, Federal Way, WA 98003. (206) 838-4677.

FONTZ!

Fontz! is a font editor and conversion utility that lets you convert Macintosh, Amiga, Hippo and DEGAS fonts to GEM format. You can scale the fonts to different sizes and use them with 9-pin or 24-pin printers, as well as Atari's laser printer.

$34.95. Neocept, 908 Camino dos Rios, Thousand Oaks, CA 91360. (805) 498-3840. Orders: (800) 666-8766.

BOMBER COMMAND

Fly a twin-engine bomber against such land, sea and air targets as moving freight trains, trucks, ships, oilfields, enemy ports and airfields. In **Bomber Command**, you'll dodge flak, attack enemy aircraft—and keep an eye peeled for enemy missiles.

$39.95. Requires joystick, color monitor. Mars Software Development, Inc., P.O. Box 70947, Pasadena, CA 91107. (800) 541-0900.

QUICK BROWN FOX

The Software Toolbox's **Mavis Beacon Teaches Typing** to those who want more than "asdfghjkl;" and "Now is the time for all good men. . ." Champ typist Mavis checks your progress every step of the way and tailors the perfect typing course to your individual needs, in QWERTY *or* Dvorak formats. When you make mistakes, Mavis explains things to you—without beeping, buzzing or shocking your fingers. In creating your customized practice exercises, Mavis quotes famous works of literature, riddles, rhymes, jokes and the Guinness Book of World Records—she wants this to be fun, not torture.

The package works with a mouse or joystick and includes 2-D and 3-D graphics, a lifelike keyboard and learning aids and the "Road-Racer" arcade typing game.

$44.95. The Software Toolworks, One Toolworks Plaza, 13557 Ventura Blvd., Sherman Oaks, CA 91423. (818) 907-6789.

SMOOCH

The high-speed GEM-based **KIS Terminal** is written with the novice online user in mind—but it's no pantywaist. You can run *any* program from within KIS. It features macros for fast log-ins, single keypresses for sending and receiving files as well as turning the capture buffer on and off. Believe it or not, it's all written and compiled in GFA BASIC.

$29.95. Alpha Tech Computers, 2901 Wayzata Blvd., Minneapolis, MN 55405. (612) 374-3232.

QUICK GFA

The **GFA Quick Reference Guide** book from Abacus gives you fast access to the hundreds of commands and functions in the powerful and accurate GFA BASIC. Chapters cover general information, commands, error messages and three indexes.

$14.95. Abacus, 5370 52nd Street SE, Grand Rapids, MI 49508. (616) 698-0330.

New ST product notices are compiled from information provided by the products' manufacturers. ***Antic*** *assumes no responsibility for the accuracy of these notices or the performance of the product.*



your crew, you have fake orders calling for your entrance into U.S. waters. Your goal is to pilot the Red October into U.S. coastal waters and deliver it—without arousing suspicion. However, the Soviet authorities are on to you and will stop you at all costs.

Of course, your sub has state-of-the-art weapons systems. Sonar not only helps identify any hostile vessels and mines, but also provides a contour map of the ocean floor (running aground is remarkably easy). Torpedoes can be either computer-controlled (automatically locking onto a target) or directed manually. An infrared targeting system makes night battles a lot easier.

This is the first sub game in which you're the hunted instead of the hunter. No points are gained by destroying enemy vessels. In fact, you want to remain as unobtrusive as possible. The graphics are good, and all the commands are mouse-controlled. However, sometimes there's a slight delay between clicking on a command and program response—which can mean certain death in the heat of battle. Fortunately, Red October comes with a save game routine.

If you are a fan of the Hunt for Red October book, or if you enjoy submarine games in general, this one should make it to your shelf.—HARVEY BERNSTEIN

$39.95, color. IntelliCreations, 19808 Nordhoff Place, Chatsworth, CA 91311. (818) 886-5922.

POLICE QUEST, SPACE QUEST II

Police Quest puts you in the role of a beat cop facing a variety of situations. Some situations are mundane, others are more headline-making, such as the game's goal—to stop the flow of drugs into a small town. Still other situations are adult in nature. These are handled in a realistic fashion and not intended to give young gamers the giggles. Parents, be warned.

It's not easy to win at Police Quest: In Pursuit of the Death Angel. For example, five pages at the back of the manual help you through your first day at the station. Try to do it by yourself—you'll likely figure most of it out. But you'll also be late for the morning briefing, which will end the game abruptly. There's a manual of department regulations you must virtually memorize in order to keep the game in motion for long. While realistic, this is frustrating for new gamers and possibly for those who haven't memorized the dialogue in every "Dragnet" episode. But there is a strong sense of actually becoming the cop on the beat.

Police Quest is well-drawn, colorful and fun to play—or just to watch being played.

After a fashion, **Space Quest II** picks up where the original Space Quest game left off. Again you'll assume the persona of Roger Wilco, a brave sanitation engineer. For those who made it through the first episode, The Sarien Encounter, the villain in Space Quest II: Vohaul's Revenge will seem quite familiar. Sludge Vohaul is back—he's armed and he's peeved. Vohaul has an army of insurance salesmen ready to make your life miserable.

While the object of the game is still to survive long enough to foil the evil plot, the humor in Space Quest II makes it easier to shrug off defeat, or maybe laugh it off.

Danger lurks at almost every corner. Space Quest II is trickier than the original and graphically superior. The game tests players severely. The programmers evidently recognized this and passed along about nine pages of step-by-step tips on how to get started. My only advice is to save your place often and don't give up the fight.—RICK TEVERBAUGH



$49.95, color or monochrome. Sierra On-line, P.O. Box 485, Coarsegold, CA 93614. (209) 683-6858.

ARCTIC FOX

If you could buy only one game for your Atari ST, it might be **Arctic Fox**, a tank-simulation game reminiscent of Atari's coin-op Battlezone—but better in every way. Alien invaders are destroying the Earth's atmosphere. You must find and destroy their main fortress to save humanity. Anything not of this Earth that gets in the way is fair game.

Fortunately, you have the Arctic Fox supertank to complete your mission. Your weapons include guided missiles, cannon, dual mine dispensers and smart bombs. You have unlimted shells to lob at alien tanks, fighters and installations. You drop mines to dispatch tanks coming up from behind. After you launch a missile, your radar screen becomes a flight simulator-type view through the missile's nose camera. When you spot a target you can set your missile to home in on it single-mindedly.

The aliens' weapons include heavy and light tanks, high speed fighters, floating mines that track you, deadly rocket launchers and reconnaissance sleds and flyers.

Stealth is important. Alien radar stations spot you, hide their own tanks and jam your missile's radar. The alien communications fort dispatches all the strikes against you. Destroying it will make things easier.

When you are finally done in by the aliens your view window cracks. A final score and a list of alien units you destroyed are displayed, as well as a

continued on next page

description of how you were killed. (The Arctic Fox was driven over a cliff, etc.)

The Enemy Preview level of Arctic Fox displays and describes each alien unit. Training options include Turbo, Invisibility, Blizzard, Jump Up, Big Radar Map, Tough Fox and Cockpit Off. The Training Mode ends quickly, however—I'd like to have continued blasting away at the aliens. Also, more could have been done with the ST's sound and music capabilities.

But I loved the way that the 3-D graphics put you into a realistic arctic world where you drive your super-tank across the tundra to save humanity while the aliens do their best to stop you. For all you frustrated rush-hour drivers, Arctic Fox will let you get through heavy (and heavily armed) traffic in style. This is a game you will return to play time and time again.—JOHN MANOR

$39.95, color. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 572-ARTS; (800) 562-1112. In CA, (800) 562-1112.

BEYOND ZORK

Beyond Zork attempts to improve upon Infocom's time-honored text adventure style by merging it with fantasy role-playing elements.

This game does not take place in Zork's Great Underground Empire, but in the Southlands of Quendor on the other side of the river. Aside from occasional references to Zorkmids, grues and the like, this in no way follows the storyline set in Zorks I-III—Infocom's first big hit.

The storyline is that magic is failing throughout the Southlands and only one brave adventurer (guess who!) can brave the pitfalls and dangers to recover the fabled Coconut of Quendor. Beyond Zork monitors your character's advancement in six key qualities—Endurance, Strength, Dexterity, Intelligence, Compassion and Luck as well as weapons and armour strength. And as in other role-playing games there is combat galore. It seems as if every other room contains discipline crabs, dornbeasts, etc. This "hack-and-slash" approach is not what we have come to expect from Infocom game.

Macros on the 10 function keys are now provided for the common commands such as examine, drop, take, etc. The text is in color (red, white and blue). The most obvious addition is a self-mapping feature. As you explore the world of Beyond Zork a map (without labels) is updated in the upper right-hand corner of the screen, with rectangles representing nearby rooms and lines indicating possible exits. This eliminates the need to type in direction commands. You can either use the mouse to point and click on a line indicating the direction that you wish to travel, or use the arrow keys. Wonder what will happen if you jump off the bridge? Now you no longer need to save the game first. Beyond Zork comes with a handy "Undo" command that back-steps you one place if you find you did something disastrous (or just plain stupid).

But all the changes I've outlined take *memory* and something had to be sacrificed. Unfortunately, Beyond Zork sacrificed exactly what Infocom writers do best—lots of descriptive text with a loving eye for detail that adds a sense of realism to good adventures. Where once there were paragraphs of description when you first entered a room, now there are two or three sentences. Want a description of a creature you've encountered? The game refers you to the *picture* and text in the package's "Lore and Legends of Quendor" booklet.

It's not intrinsically a bad thing to take advantage of the larger memory in today's personal computers by adding all sorts of bells and whistles to the established Infocom format. But if adding those bells and whistles cuts into the heart of your product, is the trade-off worth it?—HARVEY BERNSTEIN ■

$39.95, color or monochrome. Infocom, 125 CambridgePark Drive, Cambridge, MA 02140. (617) 576-3190.

New Products

continued from page 46

QUEST FOR CLUES

(book)
Origin Systems Inc.
136 Harvey Road, Bldg. B
Londonderry, NH 03053
(603) 644-3360
$24.99

At last—help for the clueless. The **Quest for Clues** book contains solutions to 50 popular text adventure and fantasy role-playing games including Autoduel, Ultima IV, Bard's Tale and King's Quest III, as well as more than 80 detailed, easy-to-read maps. Major clues are encoded, so you don't accidentally discover more than you need. An overview of each game is provided to help you decide on future purchases. The package also features "Golden Age of Adventure," an account of the evolution of computer games.

ARM+ C & D

(adventure maps)
Mars Merchandising
15 W. 615 Diversey
Elmhurts, IL 60126
(312) 530-0988
$10

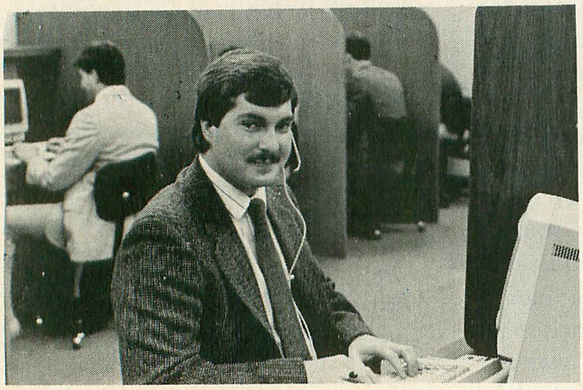
Players of Intellicreations' Alternate Reality game will benefit from the guidance of these two maps. **ARM+C** ($4.95) locates every guild, bank, casino, dungeon entrance, trap and secret wall in the city of Xebec's Demise. Also includes a list of 52 potions and a journal for recordkeeping. **ARM+D** ($5.95) details all four levels of the dungeon and gives hints for survival.

Return the favor. When you call a manufacturer or supplier about a product you've seen advertised or otherwise mentioned in ANTIC, please tell them so. This will help us to continue to bring you the latest information about products that will make your Atari computer an even more valuable investment in the future.
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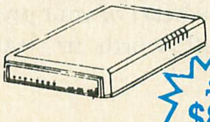
Monitors

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Graphics solution	$129.95
EGA Wonder	$199.95
VIP	$299.95

Modems

Item	Price
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1200hc Modem	$89.95
2400	$179.95
2400i PC Card	$169.95
Hayes:	
Smartmodem 300	$149.95
Smartmodem 1200	$285.95
Smartmodem 2400	$425.95

Smarteam
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ATARI

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Triple Pack	$11.95
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Activision:	
Music Studio	$19.95
Solid Gold Vol.#1	$10.95
Batteries Included:	
Paperclip 80 Col	$31.95
Broderbund:	
Print Shop	$25.49
Print Shop Compan.	$22.95
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Bank St. Writer	$27.95
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Starfleet I	$32.95
Chess Master 2000	$25.95
Music Con Set	$8.95
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One on One	$8.95
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The Pawn	$22.95
Microleague:	
Microleag. Baseball	$22.95
General Manager	$16.95
Stat Disk	$13.95
'87 Team Disk	$13.95
Microprose:	
Conflict in Vietnam	$22.95
F-15 Strike Eagle	$19.95
Kennedy Approach	$13.95
Silent Service	$19.95
Top Gunner	$13.95
Strategic Simulations:	
Battle of Antetiem	$28.95
Phantasie	$22.95
Wargame Construc.	$16.95
Wizards Crown	$22.95
Phantasie II	$22.95
Shiloh	$22.95
Eternal Dagger	$22.95
Sublogic:	
Flight Simulator II	$31.49

ATARI ST

Item	Price
Microleague:	
Microleague Baseball	$33.95
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Wrestling	$25.95
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Silent Service	$22.95
F-15 Strike Eagle	$24.95
Gunship	$28.95
Strategic Simulations:	
Phantasie	$22.95
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Sublogic:	
Flight Simulator II	$31.49
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Wordwriter ST	$44.95
Partner ST	$39.95
Data Manager ST	$44.95
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Music Studio	$27.95
Bureaucracy	$22.95
Electronic Arts:	
Arctic Fox	$25.95
Empire	$32.95
Starfleet I	$32.95
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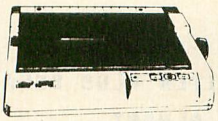
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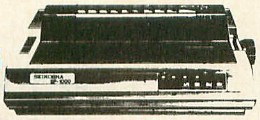
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- 36 cps NLQ
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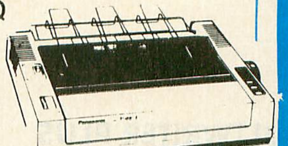
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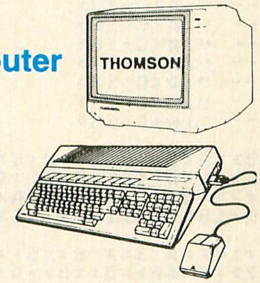
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Tech Tips

DEFAULTWRITER PLUS

Paul Alhart of Lompoc, California originally wrote this program for the Atari Federation users group newsletter.

Whenever you load AtariWriter Plus, you must go to the Global Menu and set the defaults the way you want them. If you want to do double-column condensed printing for a newsletter, then it's back to the Global Menu to set the font, left and right margins, *second* left and right margins, etc. Wouldn't it be nice to have all this already programmed in? Well, you can. You can even have two different sets of your own defaults loaded in at the same time.

At the bottom of the Global Menu it says, "Press TAB for defaults." There are already two sets of defaults: Atari just chose to make them both the same. The first set loads when the program is first booted, and the second set loads when you press [TAB] from the Global Menu. The only catch is that they aren't the defaults we want, so we'll just have to change them. That's exactly what DefaultWriter Plus lets you do. And it works on either the 48K or the 130XE versions of AtariWriter Plus.

1. Carefully type in this listing and SAVE it to disk. Double-check lines 700 to 730.

2. Copy the file AP.OBJ from your AtariWriter Plus disk onto a freshly formatted, single-density disk. Make another copy just to be safe.

3. RUN DefaultWriter Plus and follow the prompts. You can enter any number from 0 to 255 for each default value, but AtariWriter Plus is fussy. Page Wait for instance can only be a 0 or a 1, so be careful.

5. Copy AP.OBJ back to your AtariWriter Plus Disk.

That's all there is to it. You now have two sets of your own defaults: One when AtariWriter Plus first loads, and the other when you press [TAB] from the Global Menu.

NOTE: AtariWriter Plus uses a bad sector for its copy protection. This sector is not actually part of the AP.OBJ file, or any of the files for that matter. So you can copy the files back and forth without problem. However, don't format your AtariWriter Plus Disk—the program checks for the bad sector and won't run without it. ■

Don't type the TYPO II Codes!

```
BZ 1 REM ATARIWRITER PLUS DEFAULT ADJUSTE
   R
KO 3 REM BY PAUL ALHART
WC 4 REM FOR THE ATARI FEDERATION
HL 10 DIM A(55),B(27),A$(3):C=0:E=0
HL 15 ? CHR$(125);"Place disk containing
   'AP.OBJ'":? "in Drive #1."
XD 20 ? "Press RETURN when ready":INPUT A
   $
XN 30 TRAP 1000:POKE 82,2:OPEN #1,12,0,"D
   :AP.OBJ":NOTE #1,Q,W:Q=Q+79:W=W+56
LM 40 IF C=2 THEN 1000
AN 50 POINT #1,Q,W:B=0:FOR I=1 TO 4:GET #
   1,A:B=B+A:NEXT I
LS 60 IF B<>262 THEN Q=Q+21:W=W+36:C=C+1:
   GOTO 40
XN 70 FOR I=0 TO 55:GET #1,A:A(I)=A:NEXT
   I
YP 80 ? CHR$(125),"CURRENT  DEFAULTS":? :
   ? "POWER UP",,"TAB     KEY":POSITION 2
   ,4:C=0:GOSUB 500
QX 90 C=C+32:POKE 82,22:POSITION 22,4:GOS
   UB 500
EK 100 POKE 82,8:? :? "Edit  Write  Quit"
   :INPUT A$
JB 110 IF A$(1,1)="Q" THEN END
UI 120 IF A$(1,1)="W" AND E=1 THEN W=W+4:
   GOTO 700
YU 130 POSITION 8,4:E=1
IH 140 FOR I=0 TO 13:INPUT A$:A=VAL(A$):B
   (I)=A:NEXT I
YP 150 POKE 82,28:POSITION 28,4
YM 160 FOR I=14 TO 27:INPUT A$:A=VAL(A$):
   B(I)=A:NEXT I
LU 170 GOTO 100
WG 500 ? "B >--- ";A(C)
VO 510 ? "D >--- ";A(C+2)
YZ 520 ? "G >--- ";A(C+5)
BH 530 ? "I >--- ";A(C+7)
CM 540 ? "J >--- ";A(C+8)
NS 550 ? "L >--- ";A(C+10)
OY 560 ? "M >--- ";A(C+11)
QE 570 ? "N >--- ";A(C+12)
TS 580 ? "Q >--- ";A(C+15)
UY 590 ? "R >--- ";A(C+16)
VL 600 ? "S >--- ";A(C+17)
WR 610 ? "T >--- ";A(C+18)
SO 620 ? "W >--- ";A(C+21)
UY 630 ? "Y >--- ";A(C+23)
ZK 640 RETURN
QX 700 A(0)=B(0):A(2)=B(1):A(5)=B(2):A(7)
   =B(3):A(8)=B(4):A(10)=B(5):A(11)=B(6)
DP 710 A(12)=B(7):A(15)=B(8):A(16)=B(9):A
   (17)=B(10):A(18)=B(11):A(21)=B(12):A(2
   3)=B(13)
HW 720 A(32)=B(14):A(34)=B(15):A(37)=B(16
   ):A(39)=B(17):A(40)=B(18):A(42)=B(19):
   A(43)=B(20)
JB 730 A(44)=B(21):A(47)=B(22):A(48)=B(23
   ):A(49)=B(24):A(50)=B(25):A(53)=B(26):
   A(55)=B(27)
KA 740 POINT #1,Q,W:FOR I=0 TO 55:A=A(I):
   PUT #1,A:NEXT I
MA 750 CLOSE #1:GOTO 30
US 1000 CLOSE #1:? "ERROR #
   ";PEEK(195):END
```

Antic pays $25 for every original and exclusive Tech Tip submission that we publish. Send your 8-bit or ST disk and printout to: Antic Tech Tips, 544 Second Street, San Francisco, CA 94107. Tech Tips welcomes very short programs that demonstrate the Atari's powers, simple hardware modifications, or useful macros for popular software.

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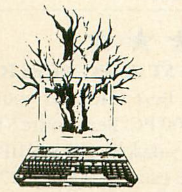
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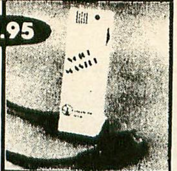
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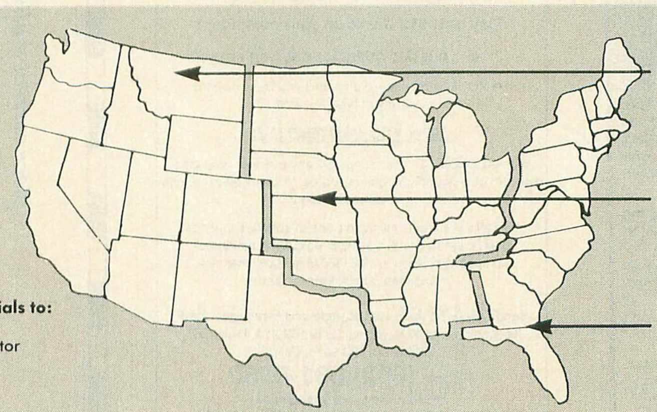
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Please write the PERCENTAGE of total **Antic** pages you think should be given to each of the following kinds of material. Don't worry if your percentages don't add up to a total of 100%—we are just interested in the relative strength of your likes and dislikes. But please note that there are 22 topics which would each be about 4.5% if equal—as well as two general categories (programs and text articles) which would each be 50% if equal.

_____% **TYPE-IN PROGRAMS:**
_____% Practical Uses
_____% Personal Finance
_____% Action/Arcade Games
_____% Business
_____% Strategic Games
_____% Short Tech Tips
_____% Adventure Games
_____% Educational
_____% Graphics
_____% Music/Sound
_____% Utilities
_____% Beginners' Easy

_____% **Articles Without Programs:**
_____% Product Reviews
_____% New Product News
_____% Company/Personal Bios
_____% 8-Bit Coverage
_____% ST Coverage
_____% Online
_____% Printers
_____% Contests/Challenges
_____% Disk-Only Bonus Software
_____% User Group Bios
_____% Atari-Unrelated Products

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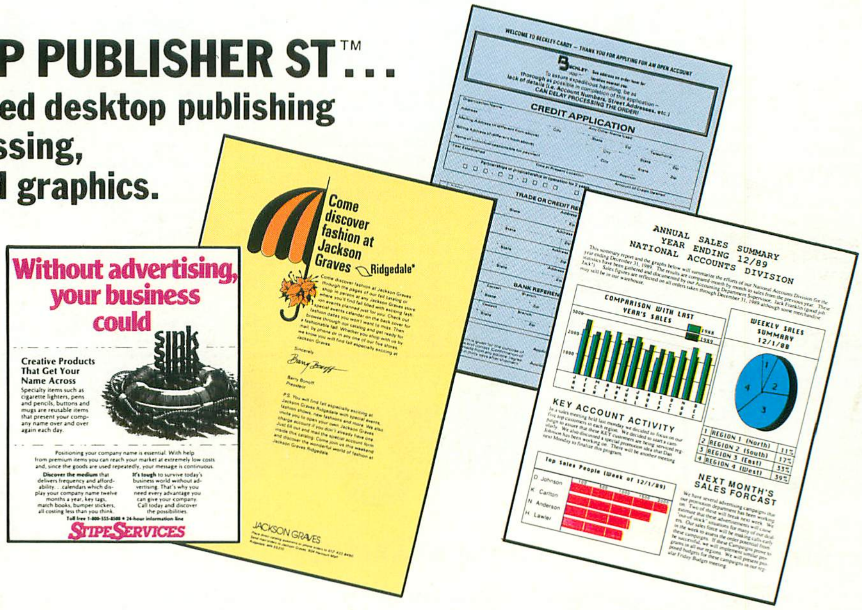
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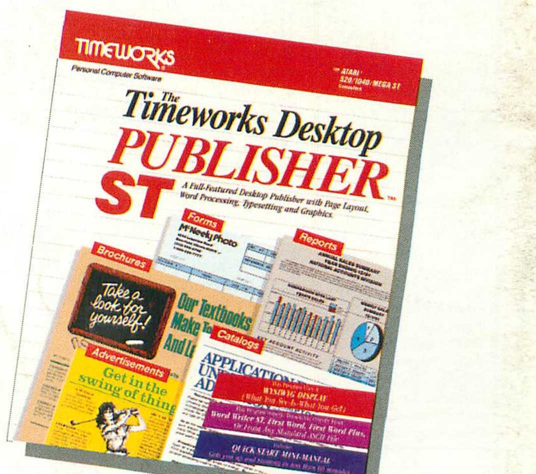
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